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1. Report of the Auditor General for the year ended 31st March, 1912 Volume I, Parts A to J. Volume II, Parts K to U. Volume III, Parts V to Y. Presented by Hon. Mr. White, 14th January, 1913.

Printed for distribution and sessional papers.

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2. The Public Accounts of Canada, for the fiscal year ended 31st March, 1912. Presented by Hon. Mr. White, 26th November, 1912.

Printed for distribution and sessional papers.

3. Estimates of sums required for the service of the Dominion for the year ending 31st March, 1914. Presented by Hon. Mr. White, 3rd February, 1913.

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4. Supplementary Estimates of sums required for the service of the Dominion for the year ending on the 31st March, 1913. Presented by Hon. Mr. White, 10th March, 1913.

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5. Supplementary Estimates of sums required for the service of the Dominion for the year ending on 31st March, 1914. Presented by Hon. Mr. White, 20th May, 1913.

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6. List of Shareholders in the Chartered Banks of the Dominion of Canada as on December 31, 1911. Presented by Hon. Mr. White, 26th November, 1912.

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7. Report on dividends remaining unpaid, unclaimed balances and unpaid drafts and bills of exchange in Chartered Banks of the Dominion of Canada, for five years and upwards prior to 31st December, 1911. Presented by Hon. Mr. White, 26th November, 1912.

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8. Report of the Superintendent of Insurance for year ended 1912. Presented by Hon. Mr. White.. .. ..*Printed for distribution nd sessional papers.*

9. Abstract of Statements of Insurance Companies in Canada for the year ended 1912. Presented by Hon. Mr. White.. .. ..*Printed for distribution and sessional papers.*

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10. Report of the Department of Trade and Commerce for the fiscal year ended 31st March, 1912. (Part I.—Canadian Trade). Presented by Hon. Mr. Foster, 30th January, 1913. *Printed for distribution and sessional papers.*

10*a*. Report of the Department of Trade and Commerce, for the year ended 31st March, 1912. (Part II.—Canadian Trade with (1) France, (2) Germany, (3) United Kingdom, and (4) United States). Presented by Hon. Mr. Foster, 12th December, 1912. *Printed for distribution and sessional papers*

10*b*. Report of the Department of Trade and Commerce for the fiscal year ended 31st March, 1912. (Part III.—Canadian Trade with Foreign Countries, except France, Germany, the United Kingdom and United States). Presented by Hon. Mr. Foster, 15th January, 1913.. .. ..*Printed for distribution and sessional papers.*

10*c*. Report of the Department of Trade and Commerce, for the fiscal year ended 31st March, 1912. (Part IV.—Miscellaneous Information). Presented by Hon. Mr. Reid, 17th February, 1913.. ... .*Printed for distribution and sessional papers.*

10*d*. Report of the Board of Grain Commisioners for Canada. Presented by Hon. Mr. Foster, 3rd February, 1913.. .. ..*Printed for distribution and sessional papers.*

10*e*. Report of the Department of Trade and Commerce for the fiscal year ended 31st March 1912. (Part VI.—Subsidized Steamship Services). Presented, 1913. *Printed for distribution and sessional papers.*

10*f*. Report of Trade and Commerce for fiscal year ended 31st March, 1912. (Part VII.—Trade of Foreign Countries, Treaties and Conventions). Presented, 1913. *Printed for distribution and sessional papers*

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13. Report of the Department of Inland Revenue for year ended 31st March, 1912. (Part II.—Inspection of Weights and Measures, Gas and Electricity). Presented by Hon. Mr. Nantel, 25th November, 1912.. .. ..*Printed for distribution and sessional papers.*

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16. Report of the Director and Officers of the Experimental Farms for the year ending 31st March, 1912. Presented by Hon. Mr. Burrell, 14th January, 1913.
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17. Criminal Statistics for the year ended 30th September, 1911, (Appendix of the Report of the Minister of Agriculture, for the year 1911). Presented by Hon. Mr. Borden, 2nd June, 1913... .. ..*Printed for distribution and sessional papers.*

18. Return of the Twelfth General Election for the House of Commons of Canada, held on the 14th and 21st of September, 1911. Presented by Hon. The Speaker, 27th November, 1912.. .. ..*Printed for distribution and sessional papers.*

18*a*. Return of By-Elections (Twelfth Parliament) for the House of Commons of Canada, held during the year 1912. Presented by Hon. The Speaker, 10th March, 1913.
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20*e*. Express Statistics of the Dominion of Canada, for the year ended 30th June, 1912. Presented by Hon. Mr. Cochrane, 12th February, 1913.
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22. Forty-fifth Annual Report of the Department of Marine and Fisheries, 1912,—Fisheries. Presented by Hon. Mr. Hazen, 5th December, 1912.
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30. The Civil Service List of Canada, 1912. Presented by Hon. Mr. Coderre, 3rd December, 1912.. .. ..*Printed for distribution and sessional papers.*

31. Fourth Annual Report of the Civil Service Commission of Canada for the period from 1st September, 1911, to 31st August, 1912. Presented by Hon. Mr. Coderre, 24th January, 1913.. .. ..*Printed for distribution and sessional papers.*

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34. Report of the Minister of Justice as to Penitentiaries of Canada, for the fiscal year ended 31st March, 1912. Presented by Hon. Mr. Doherty, 27th November, 1912.
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35. Report of the Militia Council for the fiscal year ending 31st March, 1913. Presented by Hon. Mr. Hughes, 14th January, 1913. ..*Printed for distribution and sessional papers.*

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36a. Fifth Report of the Registrar of Boards of Conciliation and Investigation of the proceedings under "The Industrial Disputes Investigation Act, 1907," for the fiscal year ending 31st March, 1912. Presented by Hon. Mr. Crothers, 28th November, 1912.
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38. Report of the Department of the Naval Service, for the fiscal year ending 31st March, 1912. Presented by Hon. Mr. Hazen, 28th November, 1912.
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39. "Miscellaneous Unforeseen Expenses," from the 1st April, to the 21st November, 1912, in accordance with the Appropriation Act of 1912. Presented by Hon. Mr. White, 25th November, 1912... .. ..*Not printed*

40. Statement of Treasury Board over-rulings, under Section 44, Consolidated Revenue and Audit Act. Presented by Hon. Mr. White, 26th November, 1912... .. ..*Not printed.*

41. Statement in pursuance of Section 17 of the Civil Service Insurance Act, for the year ending 31st March, 1912. Presented by Hon. Mr. White, 26th November, 1912.
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42. Statement of Receipts and Expenditures of the Ottawa Improvement Commission to 31st March, 1912. Presented by Hon. Mr. White, 26th November, 1912.....*Not printed.*

43. Statement of Governor General's Warrants issued since the last Session of Parliament on account of 1912-13. Presented by Hon. Mr. White, 26th November, 1912.
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44. Statement of Superannuation and Retiring Allowances in the Civil Service during the year ending 31st December, 1912, showing name, rank, salary, service, allowance and cause of retirement of each person superannuated or retired, also whether vacancy is filled by promotion or by appointment, and salary of any new appointee. Presented by Hon. Mr. White, 26th November, 1912.. .. ..*Not printed*

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45*a*. Return to lands sold by the Canadian Pacific Railway Company during the year which ended on the 1st October, 1912. Presented by Hon. Mr. Roche, 14th January, 1913.. .. ..*Not printed*

45*b*. Return to an Address to His Royal Highness the Governor General of the 27th January, 1913, for a copy of all applications made by the Canadian Pacific Railway Company for authorization to make new issue of stock, addressed to the Governor in Council, and of all correspondence with regard to the same. Presented 16th April, 1913, by Sir Wilfrid Laurier.. .. ..*Not printed*

46. Return to an Order of the House of the 18th March, 1912, for a copy of all report made by the Inspector of Agents for placing Immigrants, both domestic servants and farm labourers, in Ontario and Quebec, during the years 1910 and 1911. Presented 27th November, 1912, by Mr. Sutherland.. .. ..*Not printed.*

47. Return to an Order of the House of the 11th March, 1912, for a copy of all letters, telegrams and other papers in connection with complaints of whatever nature against Commission Agents for placing farm labourers in Ontario, also officials connected with any agency in Ontario, during the year 1910 and 1911. Presented 27th November, 1912 by Mr. Sutherland.. .. ..*Not printed*

48. Copy of Order in Council No. P. C. 1275, dated 13th May, 1912, "Award of compensation to men belonging to the Royal Canadian Navy, who may be permanently disabled though injuries or illness contracted during drill, training or on duty." Presented by Hon. Mr. Hazen, 27th November, 1912.. .. ..*Not printed.*

48*a*. Copies of plans included in the tender of Messrs. Cammel, Laird & Company, dated 29th April, 1911, for the construction of ships for the Canadian Naval Service. Presented by Hon. Mr. Hazen, 18th December, 1912.. .. ..*Not printed.*

48*b*. An Act respecting the Naval Service of Canada." (Copy of Order in Council, No. P. C. 126 dated 20th January, 1913, "Amendment to the Regulations for the Entry of Naval Cadets)." Presented by Hon. Mr. Hazen, 4th February, 1913.. ..*Not printed.*

49. Regulations under "The Destructive Insect and Pest Act." Presented by Hon. Mr. Burrell, 28th November, 1912.. .. ..*Not printed.*

50. Statement of the affairs of the Royal Society of Canada, for the year ended 30th April, 1912. Presented by Hon. Mr. White, 29th November, 1912.. .. ..*Not printed.*

51. Ordinances of the Yukon Territory passed by the Yukon Council in the year 1912. Presented by Hon. Mr. Coderre, 3rd December, 1913.. .. ..*Not printed*

52. Return of Orders in Council which have been published in the *Canada Gazette*, between 1st August, 1911, and 30th September, 1912, in accordance with the provisions of Section 77 of the Dominion Lands Act, Chapter 20 of the Statutes of Canada, 1908. Presented by Hon. Mr. Roche, 5th December, 1912.. .. ..*Not printed.*

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52*a*. Return of Orders in Council passed between the 1st August, 1911, and 30th September, 1912, in accordance with the provisions of Section 5 of the Dominion Land Survey Act, Chapter 21, 7-8 Edward VII. Presented 5th December, 1912, by Hon. Mr. Roche. *Not printed.*

52*b*. Return of Orders in Council which have been passed and published in the *Canada Gazette* and in the British Columbia *Gazette*, between 1st August, 1911, and 30th September, 1912, in accordance with provisions of Subsection (*d*) of Section 38 of the regulations for the survey, administration, disposal and management of Dominion Lands within the 40-mile Railway Belt in the Province of British Columbia. Presented by Hon. Mr. Roche, 5th December, 1912.. .. ..*Not printed*

52*c*. Return to an Order of the House of the 24th February, 1913, for a copy of all regulations issued by the Minister of the Interior, relating to the disposition of Dominion lands between 8th April, 1905, and 12th October, 1911. Presented by Hon. Mr. Roche, 25th March, 1913.. .. ..*Not printed.*

53. A detailed statement of all bonds or securities registered in the Department of the Secretary of State of Canada, since last return (28th November, 1911) submitted to the Parliament of Canada under Section 32 of Chapter 19, of the Revised Statutes of Canada, 1906. Presented by Hon. Mr. Coderre, 4th December, 1912.. .. ..*Not printed.*

54. Annual Return respecting Trade Unions under Chapter 125, R.S.C., 1906. Presented by Hon. Mr. Coderre, 4th December, 1912... . .. .*Not printed.*

55. Deliberation of the Canada-West Indies Conference, and Agreement between Canada and certain of the West India Colonies. Presented by Hon. Mr. Foster, 4th December, 1912.. .. ..*Printed for distribution and sessional papers*

56. Orders in Council passed between the 1st August, 1911, and 30th September, 1912, in accordance with the provisions of the Rocky Mountains Park Act, Chapter 60, Revised Statutes of Canada, 1906. Presented by Hon. Mr. Rogers, 4th December, 1912. *Not printed.*

56*a*. Return of Orders in Council passed between the 1st August, 1911, and 30th September, 1912, in accordance with the provisions of the Forest Reserves and Park Act, Section 19, of Chapter 10, 1-2 George V. Presented by Hon. Mr. Roche, 5th December, 1912. *Not printed.*

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57. Report of the Public Service Commission. Presented by Hon. Mr. Borden, 9th December, 1912. Parts I, II, and III.. .. .. ..*Printed for distribution and sessional papers.*

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57*a*. Report on the organization of the Public Service of Canada, by Sir George Murray. Presented by Hon. Mr. Borden, 18th December, 1912. *Printed for distribution and sessional papers.*

58. Report of the proceedings for the preceding year of the Commissioners of Internal Economy of the House of Commons, pursuant to Rule 9. Presented by Hon. The Speaker, 9th December, 1912.. .. ..*Not printed.*

59. Schedules of Trade Transactions between the West Indies and Canada, the United States and the United Kingdom, compiled from the West Indian blue books and statistics. Presented by Hon. Mr. Foster, 12th December, 1912. *Printed for distribution and sessional papers.*

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59*a*. Trade Statistics of Imports and Exports in possession of the Government, *re* British West Indies. (*Senate*).. .. ..*Not printed.*

60. Return showing correspondence concerning the calling for tenders for the Ships of War of Canada, together with copies of tenders. Presented by Hon. Mr. Hazen, 12th December, 1912.. .. ..*Not printed.*

61. Return to an Order of the House of the 9th December, 1912, for a copy of all correspondence, telegrams, reports and documents relating to the dismissal of John R McDonald, Heatherton, Antigonish County, as Indian agent for the district including the Counties of Antigonish and Guysborough, and the appointment of his successor. Presented 4th January, 1913.—*Mr. Chisholm* (*Antigonish*).. .. ..*Not printed.*

61*a*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Dr. C. P. Bissett, Physician to the Indians at Salmon River, Richmond County, N.S. Presented 14th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*b*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Michael Murphy, postmaster at Point Micheau, Richmond County, N.S. Presented 4th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*c*. Return to an Order of the House of the 9th December, 1912, for copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of David A. McLeod, Postmaster at Cleveland, Richmond County, N.S. Presented 14th January.—*Mr. Kyte*.. .. ..*Not printed.*

61*d*. Return to an Order of the House of the 4th December, 1912, for a copy of all papers, letters, complaints, telegrams, reports, and other documents in the possession of the Post Office Department relating to the dismissal of John Milward, Postmaster at Stormont, Guysborough County, N.S. Presented 14th January, 1913.—*Mr. Sinclair.*
Not printed.

61*e*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents, relating to the dismissal of Kenneth F. McAskill, Postmaster at Loch Lomond, Richmond County, N.S. Presented 14th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*f*. Return to an Address to His Royal Highness the Governor General of the 25th March, 1912, for a copy of all letters, telegrams, memorandums and Orders in Council, relating to the dismissal of Mr. W. W. Hayden, late wharfinger of the government wharf at Digby, Nova Scotia. Presented 14th January, 1913.—*Mr. MacLean* (*Halifax*).
Not printed.

61*g*. Return to an Order of the House of the 11th December, 1912, for a copy of all complaints and charges made against W. B. Langley, assistant at Lobster Hatchery, Nova Scotia, and of all letters, telegrams and correspondence relating in any way to his dismissal and the appointment of a successor. Presented 14th January, 1913.—*Mr Sinclair*.. .. ..*Not printed.*

61*h*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Fred. E. Cox, engineer lobster hatchery at Isaac's Harbour, Guysborough County, N.S., and of the evidence taken and report of investigation held by H. P. Duchemin in regard to the same. Presented 14th January, 1913.—*Mr. Sinclair*.. .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61*i*. Return to an Order of the House of the 11th December, 1912, for a copy of all complaints and charges made against Simon Hodgson, engineer lobster hatchery at Isaac's Harbour, Nova Scotia, and of all letters, telegrams and correspondence relating in any way to his dismissal and the appointment of a successor. Presented 14th January 1913.—*Mr. Sinclair*.. .. ..*Not printed.*

61j. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Henry Henlow, chief engineer at lobster hatchery at Canso, Guysborough County, N.S. Presented 14th January, 1913.—*Mr. Sinclair*.. .. ..*Not printed.*

61*k*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of H. C. V. LeVatte, harbour master at Louisburg, Cape Breton South, N.S., and of evidence taken and report of investigations held by H. P. Duchemin, in regard to the same. Presented 14th January, 1913.—*Mr. Carroll*.. .. ..*Not printed.*

61*l*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of John Cummings, assistant at the lobster hatchery at Isaac's Harbour, Nova Scotia, and of evidence taken and reports of investigation held by H. P. Duchemin, in regard to the same. Presented 14th January, 1913.—*Mr. Sinclair*.. .. ..*Not printed.*

61*m*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of W. G. Matthews, coxswain, lifeboat crew at Canso, Guysborough County, N.S., and all evidence taken and report of investigation held by H. P. Duchemin in regard to the same; also a detailed statement of the expenses of such investigation. Presented 14th January, 1913.—*Mr. Sinclair*.. .. ..*Not printed.*

61*n*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams, and other documents relating to the dismissal of Joseph Shean, harbour master at North Sydney, N.S., in the riding of North Cape Breton and Victoria. Presented 14th January, 1913.—*Mr. McKenzie*.. .. ..*Not printed.*

61*o*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents, relating to the dismissal of George H. Sampson, keeper of the storm signal at Lower L'Ardoise, Richmond County, N.S. Presented 14th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*p*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Alexis Vigneau, captain of the patrol boat at Arichat, Richmond County, N.S. Presented 14th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*q*. Return to an Address to His Royal Highness the Governor General of the 4th December, 1912, for a copy of all correspondence, Orders in Council and all other papers or documents in any way relating to the dismissal of Emeri Thivierge, from the position of fisheries inspector for the Counties of Prescott and Russell. Presented 14th January, 1913.—*Mr. Murphy*.. .. ..*Not printed.*

61*r*. Return to an Order of the House of the 9th December, 1912, for a return showing all the public officers of the Inland Revenue Department in the County of St. Jean Iberville, removed by the present Government since 1st May, 1912, together with the names and duties of such persons, the reasons of their dismissal, the nature of the

CONTENTS OF VOLUME 27—*Continued.*

complaints against them, the names of the persons who brought these complaints; also a copy of all correspondence relating thereto, and of the reports of inquiries in the cases where such have been held. Presented 14th January, 1913.—*Mr. Demers.*

Not printed.

61*s*. Return to an Order of the House of the 4th December, 1912, for a copy of all correspondence, complaints, petitions, memoranda, notes of evidence, reports of investigations and other documents in the possession of the Department of Inland Revenue regarding the dismissal of J. Fabien Bugeaud, Bonaventure, Quebec, assistant inspector of weights and measures in the Quebec district, and the appointment of his successor or successors, with the names, residence, salaries and duties; also of all documents relating to A. B. Caldwell, New Carlisle, Quebec, joint assistant inspector with J. Fabien Bugeaud, and the duties assigned to him, together with a copy of all recommendations for said new appointment. Presented 14th January, 1913.—*Mr. Marcil' (Bonaventure)*.. .. ..*Not printed.*

61*t*. Return to an Address to His Royal Highness the Governor General of the 4th December, 1912, for a copy of all correspondence, Orders in Council and all other papers or documents in any way relating to the dismissal of Duncan McArthur, from the Annuities Branch, while the said branch was attached to the Department of Trade and Commerce. Presented 15th January, 1913.—*Mr. Murphy*.. .. ..*Not printed.*

61*u*. Return to an Order of the House of the 26th February, 1912, for a copy of all documents, letters, requests, reports, recommendations and evidence taken under investigation by Dr. Shentliff, relating to the dismissal of Charles O. Jones, postmaster of Bedford, County of Missisquoi. Presented 15th January, 1913.—*Mr. Kay.*

Not printed.

61*v*. Return to an Order of the House of the 1st April, 1912, for a copy of all letters, telegrams, complaints or other papers or documents in the possession of the Government or any department thereof, relating to the dismissal of Archibald Barss, postmaster, New Harbour, West, Guysborough County, N.S. Presented 15th January, 1913.—*Mr. Sinclair*.. .. ..*Not printed.*

61*w*. Return to an Order of the House of the 10th December, 1912, for a copy of all correspondence, documents, recommendation and other reports respecting the dismissal of Dr. A. Allaire as surgeon of the penitentiary of St. Vincent de Paul, and also respecting the payments of his gratuities, superannuation or retiring allowance. Presented 15th January, 1913.—*Mr. Wilson (Laval)*.. .. ..*Not printed*

61*x*. Return to an Order of the House of the 10th December, 1912, for a copy of all correspondence, documents, recommendations and reports respecting the dismissal of Oscar Beauchamp as warden of the penitentiary of St. Vincent de Paul, and also respecting the payments of his gratuities, superannuation or retiring allowance. Presented 15th January, 1913.—*Mr. Wilson (Laval)*.. .. ..*Not printed.*

61*y*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of John McDonald, freight handler and checker Intercolonial railway at Sydney Mines Nova Scotia, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 16th January, 1913.—*Mr. Mackenzie*.. .. ..*Not printed.*

61*z*. Return to an Order of the House of the 9th December, 1912, for a copy of all letters, correspondence, documents and reports relating to the dismissal of Allan Kinney, of Linwood, Antigonish County, Nova Scotia, a sectionman on the Intercolonial rail-

CONTENTS OF VOLUME 27—*Continued.*

way, and for a statement in detail of the expenses in connection with the investigation of the charges against him. Presented 16th January, 1913.—*Mr. Chisholm (Antigonish)*.. .. ..*Not printed.*

61*aa*. Return to an Order of the House of the 9th December, 1912, for a copy of all letters, correspondence, documents and reports relating to the dismissal of Charles Landry, of Pomket, Antigonish county, Nova Scotia, a sectionman on the Intercolonial railway, and for a statement in detail of the expenses connected with the investigation of the charges against him. Presented 16th January, 1913.—*Mr. Chisholm (Antiginish)*.. .. ..*Not printed.*

61*bb*. Return to an Order of the House of the 4th December, 1912, for a copy of all papers, documents, reports, correspondence, &c., relating to the dismissal of Patrick Decoste, an employee on the ferry steamer *Scotia* between Mulgrave and Point Tupper on the Intercolonial railway. Presented 16th January, 1913.. .. ..*Not printed.*

61*cc*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Harry E. McDonald, assistant engineer at St. Peters Canal, Richmond County, N.S Presented 13th January, 1913.—*Mr. Kyte.*

61*dd*. Return to an order of the House of the 9th December, 1912, for a copy of all letters, papers, documents, telegrams, and charges relating to a complaint against Neil Ross sectionman on the Intercolonial railway at West River, County of Pictou, and of the evidence taken at the investigation, of the report of the commissioner thereon, and of all letters, papers or other documents relating to the appointment of his successor. Presented 16th January, 1913.—*Mr. Macdonald*.. .. ..*Not printed.*

61*ee*. Return to an Order of the House of the 9th December, 1912, for a copy of all letters, correspondence, documents and reports relating to the dismissal of James Armstrong, of Heatherton, Antigonish County, N.S., a sectionman on the Intercolonial railway, and for a statement in detail of the expenses connected with the investigation of the charges against him. Presented 16th January, 1913.—*Mr. Chisholm (Antigonish)*. *Not printed.*

61*ff*. Return to an Order of the House of the 4th December, 1912, for a copy of all letters, telegrams and other documents, relating to the dismissal of Thomas J. Gray, as car inspector on the Intercolonial railway at Westville, County of Pictou. Presented 16th January, 1913.—*Mr. Macdonald*.. .. ..*Not printed.*

61*gg*. Return to an Order of the House of the 9th December, 1912, for a copy of all correspondence, telegrams and reports relating to the dismissal of Colin Macdonald, of James River Station, County of Antigonish, as Intercolonial sectionman, and the appointment of his successor. Presented 16th January, 1913.—*Mr. Chisholm (Antigonish)*.. .. ..*Not printed.*

61*hh*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams, and other documents relative to the dismissal of A. T. Gannon, car repairer and inspector Intercolonial railway at North Sydney, Nova Scotia, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 16th January, 1913.—*Mr. McKenzie*.. .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61*ii*. Return to an Order of the House of the 9th December, 1912, for a copy of all letters, correspondence, documents, and reports relating to the dismissal of Huber Myatte, Tracadie, Antigonish County, Nova Scotia, a sectionman on the Intercolonial railway and for a statement in detail of the expenses connected with the investigation of the charges against him. Presented 16th January, 1913.—*Mr. Chisholm* (*Antigonish*).
Not printed.

61*jj*. Return to an Order of the House of the 9th December, 1912, for a copy of all letters, correspondence, documents, and reports relating to the dismissal of John McDonnell, Afton Station, Antigonish County, Nova Scotia, a sectionman on the Intercolonial railway, and for a statement in detail of the expenses connected with the investigation of the charges against him. Presented 17th January, 1913.—*Mr. Chisholm* (*Antigonish*).. .. ..*Not printed.*

61*kk*. Return to an Order of the House of the 9th December, 1911, for a copy of all letters, correspondence, documents and reports relating to the dismissal of William Landry, of Pomket, Antigonish County, Nova Scotia, a section foreman of the Intercolonial railway, and for a statement in detail of the expenses connected with the investigation of the charges againt him. Presented 17th January, 1913.—*Mr. Chisholm* (*Antigonish*).. .. ..*Not printed.*

61*ll*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, telegrams and other documents relative to the dismissal of D. J. McDougall, section foreman, Intercolonial railway, Grand Narrows, Nova Scotia, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 17th January, 1913.—*Mr. McKenzie.*
Not printed.

61*mm*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Dan. A. Coffey, lockman at St. Peter's canal, Richmond County, N.S., and of the evidence taken and of the reports of investigation held by H. P. Duchemin, in regard to the same, and a detailed statement of the expenses of such investigation; and a copy of all papers relating to the appointment of his successor. Also, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of W. A. McNeil, lockman at St. Peter's canal, Richmond County, N.S., and of the evidence taken and of the report of investigation held by H. P. Duchemin in regard to the same, and a detailed statement of the expenses of such investigation; and a copy of all papers relating to the appointment of his successor. Presented 17th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*nn*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of John P. Meagher, foreman deckhand on steamship *Scotia*, Mulgrave, Guysborough County, N.S., and of all evidence taken and reports of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 17th January, 1913.—*Mr. Sinclair*.. .. ..*Not printed.*

61*oo*. Return to an Order of the House of the 4th December, 1912, for a copy of all letters, telegrams, evidence taken, reports, &c., and of all correspondence between the Postmaster General and officers of his department, and James Gibson, ex-postmaster of Alameda, Sask., in connection with the instructions sent him to hand the office over to E. Cronk. Presented 17th January, 1913.—*Mr. Turriff*.. .. ..*Not printed.*

61*pp*. Return to an Order of the House of the 11th December, 1912, for a copy of all papers, documents and correspondence relating to the dismissal of Captain C. E. Miller from the 75th Regiment. Presented 17th January, 1913.—*Mr. Maclean* (*Halifax*).
Not printed.

CONTENTS OF VOLUME 27—*Continued.*

61*qq*. Return to an Order of the House of the 9th December, 1912, for a copy of all correspondence, letters and telegrams relating to the dismissal of J. N. N. Poirier, collector of excise at Victoriaville, Quebec, and also of the inquiry made by N. Garceau, by the Minister of Inland Revenue, and especially of two affidavits given by Ludger Frechette and Joseph Faucher. Presented 17th January, 1913.—*Mr. Brouillard.* *Not printed.*

61*rr*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams, and other documents relative to the dismissal of Abraham Astephen, of North Sydney, N.S., interpreter Immigration Department at North Sydney, N.S., in the riding of North Cape Breton and Victoria. Presented 17th January, 1913.—*Mr. McKenzie*.. .. ..*Not printed.*

61*ss*. Return to an Address to His Royal Highness the Governor General of the 4th December, 1912, for a copy of all correspondence, Orders in Council, and all other papers or documents in any way relating to the dismissal of Robert Dow from the Immigration Branch of the Department of the Interior at Ottawa. Presented 17th January, 1913. —*Mr. Murphy*.. .. ..*Not printed.*

61*tt*. Return to an Order of the House of the 9th December, 1912, for a copy of all papers, documents, correspondence, &c., relating to the dismissal of John Ware of the Immigration Branch of the Interior Department at Halifax, N.S. Presented 17th January, 1913.—*Mr. Maclean (Halifax)*.. .. ..*Not printed.*

61*uu*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges correspondence, letters, telegrams, and other documents relative to the dismissal of Richard Hickey, agent Immigration Department at North Sydney, Nova Scotia, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to the same, and a detailed statement of the expenses of such investigation. Presented 17th January, 1913.—*Mr. McKenzie*.. .. ..*Not printed.*

61*vv*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges correspondence, letters, telegrams, and other documents relative to the dismissal of Dr. J. W. McLean, of North Sydney, N.S., medical examiner, Immigration Department at North Sydney, N.S., in the riding of North Cape Breton and Victoria. Presented 17th January, 1913.—*Mr. McKenzie*.. .. ..*Not printed.*

61*ww*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of John A. McRea, lightkeeper, at Margaree Island, Inverness County, Nova Scotia, of the evidence taken and report of investigation held by H. P. Duchemin in regard to the same; also a detailed statement of the expenses of such investigation. Presented 17th January, 1913.—*Mr. Chisholm (Inverness)*.. .. .. ..*Not printed.*

61*xx*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Thomas Brymer, lightkeeper at Lower L'Ardoise, Richmond County, N.S. Presented 17th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*yy*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges correspondence, letters, telegrams and other documents relating to the dismissal of Dominique Boudrot, buoy contractor, at Petit de Grat, Richmond County, N.S. Presented 17th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61*zz*. Return to an Order of the House of the 4th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents concerning the dismissal of Frederick F. Doucet, keeper of the lighthouse at the entrance of the harbour of Caraquet, County of Gloucester, and the nomination of his successor. Presented 17th January, 1913.—*Mr. Turgeon*.. .. ..*Not printed.*

61*aaa*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of W. H. Henlow, keeper of storm drum, Liscomb, Guysborough County, N.S. Presented 17th January, 1913.—*Mr. Sinclair*.. .. ..*Not printed.*

61*bbb*. Return to an Order of the House of the 4th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of David Falconer, lightkeeper at Cariboo Island, County of Pictou. Presented 17th January, 1913.—*Mr. Macdonald*.. .. ..*Not printed.*

61*bbb*. Return to an Order of the House of the 4th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of M. Wilson Lawlor, harbour commissioner at North Sydney, Nova Scotia, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 17th January, 1913.—*Mr. McKenzie.*

Not printed.

61*ddd*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of P. J. McDonald, harbour commissioner at North Sydney, Nova Scotia, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 17th January, 1913.—*Mr. McKenzie.*

Not printed.

61*eee*. Return to an Order of the House of the 9th December, 1912, for a return showing: 1. The names of all lightkeepers in the Province of Nova Scotia who were dismissed from office or employment since 10th October, 1911, together with the date of each dismissal. Presented 17th January, 1913.—*Mr. Maclean (Halifax)*.. .. ..*Not printed.*

61*fff*. Return to an Order of the House of the 4th December, 1912, for a return showing the detail and number of dismissals from public offices in the Department of Marine and Fisheries to this date in the County of Bonaventure, the names of the dismissed occupants, the reasons for their dismissal, the complaints against such officials and a copy of all correspondence with respect to the same, and of all reports of investigations where such were held; as well as a list of the new appointments made by the department, with names, residences, salaries and duties, and a copy of all recommendations of such appointments. Presented 17th January, 1913.—*Mr. Marcil (Bonaventure).*

Not printed.

61*ggg*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of H. L. Tory, fishery officer at Guysborough, Guysborough County, N.S., and of all evidence taken, and report of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of the investigation. Presented 17th January, 1913.—*Mr. Sinclair*.. .. ..*Not printed.*

61*hhh*. Return to an Order of the House of the 4th December, 1912, for a copy of all charges, correspondence, letters, telegrams, and other documents in the possession of the Department of Marine and Fisheries relating to the dismissal of John W. Davis, fishery officer, Guysborough, N.S. Presented 17th January, 1913.—*Mr. Sinclair.*

Not printed.

CONTENTS OF VOLUME 27—*Continued.*

61*jjj*. Return to an Order of the House of the 4th December, 1912, for a copy of all charges correspondence, letters, telegrams and other documents relating to the dismissal of Martin Bourque, lightkeeper at River Bourgeois, Richmond County, N.S., and of the evidence taken and of the report of the investigation held by H. P. Duchemin in regard to the same, and a detailed statement of the expenses of such investigation; and a copy of all papers relating to the appointment of his successor. Presented 17th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*jjj*. Return to an Order of the House of the 4th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Frederick Poirier, buoy contractor, at Descouse, Richmond County, N.S. Presented 17th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*kkk*. Return to an Order of the House of the 4th December, 1912, for a copy of all papers, letters, telegrams and petitions for and against the dismissal of Dr. George Pinault, as medical health officer of the Mic-Mac Indian reserve, at Ste. Anne de Restigouche, Bonaventure County, Quebec, and of all documents relating to the appointment of a successor, with the name, residence, salary and duties of the new appointee. Presented 20th January, 1913.—*Mr. Marcil*.. .. ..*Not printed.*

61*lll*. Return to an Order of the House of the 1st April, 1912, for a copy of all papers, letters, &c., concerning the dismissal of Frederick Veit, employed by the Department of Marine and Fisheries in the County of Gaspé. Presented 20th January, 1913.—*Mr. Lemieux*.. .. ..*Not printed.*

61*mmm*. Return to an Order of the House of the 1st April, 1912, for a copy of all letters, petitions, complaints, declarations and other documents in the possession of the Department of Marine and Fisheries, relating to the dismissal of Mr. Alfred Lalonde, employed in the warehouse of the Government yards at St. Joseph de Sorel and the appointment of his successor. Presented 20th January, 1913.—*Mr. Cardin*..*Not printed.*

61*nnn*. Return to an Order of the House of the 1st April, 1912, for a copy of all letters telegrams, complaints or other papers or documents in the possession of the Government or any department thereof, relating to the dismissal of James Webber, lightkeeper, Tor Bay Point, N.S. Presented 20th January, 1913.—*Mr. Sinclair.*
Not printed.

61*ooo*. Return to an Order of the House of the 1st April, 1912, for a copy of all documents letters, inquiries, reports, evidence, &c., relating to the dismissal or the resignation of Baptiste Desjardins as lighthouse keeper at Kamouraska. Presented 20th January, 1913.—*Mr. Lapointe* (*Kamouraska*).. .. ..*Not printed.*

61*ppp*. Return to an Order of the House of the 4th December, 1912, for a copy of all correspondence, letters, telegrams and other documents relating to the dismissal of Angus Smith, pilot on the steamer *Earl Grey*, and also of all the evidence taken at the latest investigation held in regard to the said complaints, and of the report of the investigation with regard to the same. Presented 20th January, 1913—*Mr. Macdonald.*
Not printed.

61*qqq*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Michael J. Sampson, lightkeeper at Lower L'Ardoise, Richmond County, N.S. Presented 20th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*rrr*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of William Hackett, harbour commissioner at North Sydney, Nova Scotia, in the riding

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of North Cape Breton and Victoria; and of the evidence taken and report of investigation held by H. P. Duchemin in regard to same, and a detailed statement of the expenses of such investigation. Presented 20th January, 1913.—*Mr. McKenzie.*

Not printed.

61*sss*. Return to an Order of the House of the 9th December, 1912, for a copy of all correspondence and other documents in the possession of the Department of Marine and Fisheries relating to the dismissal of Hormidas Lacasse, as wharfinger on the government wharf at Wendover, County of Prescott, Ontario, and the appointment of his successor. Presented 20th January, 1913.—*Mr. Proulx*.. .. ..*Not printed.*

61*ttt*. Return to an Order of the House of the 9th December, 1912, for a copy of all documents, papers, evidence and correspondence, relating to the dismissal of Geoffrey Gorman, coxswain of the lifeboat station at Herring Cove, Halifax County, N.S. Presented 20th January, 1913.—*Mr. Maclean (Halifax)*.. .. .. *Not printed.*

61*uuu*. Return to an Order of the House of the 10th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Captain George Wetmore, harbour master at Yarmouth, Yarmouth County, N.S., and the same information regarding the appointment of Captain Wetmore's successor, and of all evidence taken and report of investigation held by Charles Lane in regard to the same, also a detailed statement of expenses of such investigation. Presented 20th January, 1913.—*Mr. Law*.. .. ..*Not printed.*

61*vvv*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Stanley Henlow, lightkeeper at Liscomb, Guysborough County, N.S., and of evidence taken and report of investigation held by H. P. Duchemin in regard to the same; also a detailed statement of the expenses of such investigation. Presented 20th January, 1913.—*Mr. Sinclair*.. .. ..*Not printed.*

61*www*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of H. C. V. LeVatte, fishery officer at Louisburg, Cape Breton South, N.S., and of the evidence taken and reports of investigations held by H. P. Duchemin, in regard to the same. Presented 20th January, 1913.—*Mr. Carroll*.. .. ..*Not printed.*

61*xxx*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Elias M. Boudrot, keeper of storm signal at Petit de Grat, Richmond County N.S., and of the evidence taken and report of investigation held by H. P. Duchemin in regard to the same and a detailed statement of the expenses of such investigation; and a copy of all papers relating to the appointment of his successor. Presented 20th January, 1913.—*Mr Kyte*.. .. ..*Not printed.*

61*yyy*. Return to an Order of the House of the 10th December, 1912, for a return of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of A. B. Cox, Superintendent of Reduction Works at Canso, Guysborough County, N.S., and of all evidence taken and report of investigation held by H. P. Duchemin in regard to the same; also a detailed statement of the expenses of such investigation. Presented 20th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*zzz*. Return to an Order of the House of the 9th December, 1912, for a copy of all complaints and charges made against Jeffrey Crespo, sub-collector of Customs at Harbour au Bouche, Antigonish County, Nova Scotia, and of all letters, telegrams, correspondence and reports relating in any way to his dismissal and the appointment of a successor. Presented 20th January, 1913.—*Mr. Chisholm (Antigonish)*.

Not printed.

CONTENTS OF VOLUME 27—*Continued.*

61*aaaa*. Return to an Order of the House of the 9th December, 1912, for a copy of all letters, papers, charges and correspondence between the Department of Customs and all other persons regarding the dismissal from office of Thomas Cameron, preventive officer at Andover, N.B., and also of all evidence and reports thereon with reference to the dismissal of the said officer. Presented 20th January, 1913.—*Mr. Michaud.*
Not printed.

61*bbbb*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of L. W. Pye, customs officer at Liscomb, Guysborough County, N.S., and of all evidence taken and reports of investigation held by H. P. Duchemin in regard to the same; also a detailed statement of the expenses of such investigation. Presented 20th January, 1913.—*Mr. Sinclair*.. .. ..*Not printed.*

61*cccc*. Return to an Order of the House of the 9th December, 1912, for a copy of all complaints, accusations, inquiries, reports, correspondence, and of all documents relating to the dismissal of Lucien O. Thisdale, a customs employee at Valleyfield, Quebec, and the appointment of his successor. Presented 20th January, 1913.—*Mr. Papineau.*
Not printed.

61*dddd*. Return to an Order of the House of the 11th December, 1912, for a copy of all letters, telegrams, correspondence, reports, and other documents relating to the dismissal of Alexander Macdonald of Doctor's Brook, Antigonish County, as sub-collector of customs. Presented 20th January, 1913.—*Mr. Chisholm* (*Antigonish*).
Not printed.

61*eeee*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams, and other documents relative to the dismissal of Henry Cann, customs official and preventive officer at North Sydney, Nova Scotia, in the riding of North Cape Breton and Victoria. Presented 20th January, 1913.—*Mr. McKenzie*.. .. ..*Not printed*

61*ffff*. Return to an Order of the House of the 10th December, 1912, for a copy of all documents concerning the dismissal of Charles Mennier, customs preventive officer at Marieville, Quebec. Presented 20th January, 1913.—*Mr. Lemieux*.. .. ..*Not printed.*

61*gggg*. Return to an Order of the House of the 5th December, 1912, for a copy of all charges, correspondence, letters, telegrams, instructions, minutes of evidence taken and had on any inquiry investigation had, held or taken, and of all other papers and documents relating to the dismissal of George H. Cochrane, Collector of Customs at the Port of Moncton, New Brunswick; together with a copy of all letters and other correspondence between the Honourable Minister of Customs, and the member representing the County of Westmorland, New Brunswick, in this House, and of all letters, papers, telegrams, recommendations, appointments, or other papers and documents relating to the appointment of a collector of customs to succeed the said George H. Cochrane. Presented 20th January, 1913.—*Mr Emmerson*.. .. ..*Not printed.*

61*hhhh*. Return to an Order of the House of the 22nd January, 1912, for a copy of all correspondence, documents, recommendations and reports respecting the dismissal of C Michaud, postmaster at St. Germain, Kamouraska, and the appointment of his successor. Presented 20th January, 1913.—*Mr. Lapointe* (*Kamouraska*).. ..*Not printed.*

61*iiii*. Return to an Order of the House of the 25th March, 1912, for a copy of all letters, telegrams and other documents, and of all complaints or accusations relating in any manner to the dismissal of Mr. Emile Archambault, letter carrier of Montreal, and a copy of the inquiry, and of the report of the inquiry held. Presented 20th January, 1913.—*Mr. Seguin*.. .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61*jjjj*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Norman Morrison, postmaster at Ferguson's Lake, Richmond County, N.S. Presented 21st January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*kkkk*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of D. J. McKillop, postmaster at McKillop, Richmond County, N.S. Presented 21st January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*llll*. Return to an Order of the House of the 22nd January, 1912, for a copy of all correspondence, papers and reports in connection with the investigation recently held at the Ste. Agathe post office, County of Terrebonne. Presented 21st January, 1913.—*Mr. L mieux*.. .. ..*Not printed.*

61*mmmm*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Bertie Boudrot, lightkeeper at Poulamon, Richmond County, N.S., and of the evidence taken and reports of investigation held by H. P. Duchemin in regard to the same, and a detailed statement of the expenses of such investigation, and a copy of all papers relating to the appointment of his successor. Presented 22nd January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*nnnn*. Return to an Order of the House of the 1st April, 1912, for a copy of all letters, telegrams and other documents and of all complaints, accusations and requests for inquiry, relating in any manner to the lighthouse keepers of Repentigny, P.Q., Messrs. Leon Rivest, J. B. Lachapelle and Louis Dubois, since 21st September last; also a copy of the inquiry and the report of the inquiry held in the matter. Presented 22nd January, 1913.—*Mr. Seguin*.. .. ..*Not printed.*

61*oooo*. Return to an Order of the House of the 9th December, 1912, for a copy of all papers, documents, telegrams, letters, &c., relating to the dismissal of L. P. Carignan, forest ranger in the constituency of Champlain, Quebec. Presented 24th January, 1913.—*Mr. Maclean (Halifax)*.. .. ..*Not printed.*

61*pppp*. Return to an Order of the House of the 5th December, 1912, for a copy of all correspondence, complaints, petitions, memoranda, notes of evidence, letters, reports of investigations and other documents in the possession of the Department of Customs, relating to the dismissal of James S. Harvey, preventive officer, New Richmond, Quebec; W. L. Kempffer, preventive officer at Paspebiac, Quebec; J. Herbert Sweetman, preventive officer at Port Daniel, Quebec; J. B. Le Blanc, preventive officer, at Carleton, Quebec; J. Nadeau, preventive officer, Nouvelle, Quebec, as well as a copy of all recommendations made regarding the appointment of their various successors and the names, salaries, duties and residences, with a copy of their instructions. Presented 24th January, 1913.—*Mr. Marcil*.. .. ..*Not printed.*

61*qqqq*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams, and other documents relative to the dismissal of William Marsh, preventive officer at Little Pond, Sydney Mines, in the riding of North Cape Breton and Victoria. Presented 24th January, 1913.—*Mr. McKenzie*. *Not printed.*

61*rrrr*. Return to an Order of the House of the 9th December, 1912, for a copy of all papers, letters, telegrams, and petitions, for and against the dismissal of Duncan McDonald, preventive officer of customs at Athelstan, County of Huntingdon; also a copy of the report of investigation and evidence submitted to investigating commissioner. Presented 24th January, 1913.—*Mr. Robb*.. .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61*ssss*. Return to an Address to His Royal Highness the Governor General of the 11th December, 1912, for a copy of all papers, documents, orders in council, telegrams, letters, &c., relating to the dismissal from office of Lemuel Bent, late Collector of Customs at Oxford, N.S. Presented 24th January 1913.—*Mr. Maclean (Halifax).* *Not printed.*

61*tttt*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Pascal Poirier, Collector of Customs at Descouse, Richmond County, N.S., and of the evidence taken and reports of investigation held by H. P. Duchemin in regard to the same and a detailed statement of the expenses of such investigation; and a copy of all papers relating to the appointment of his successor. Presented 24th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*uuuu*. Return to an Order of the House of the 4th December, 1912, for a copy of all correspondence, letters, telegrams, reports and other documents concerning the dismissal of Donald J. Hachey, Collector of Customs at Bathurst, County of Gloucester, and the appointment of his successor. Presented 24th January, 1913.—*Mr. Turgeon.* *Not printed.*

61*vvvv*. Return to an Address to His Royal Highness the Governor General of the 4th December, 1912, for a copy of all correspondence, orders in council, and all other papers or documents in any way relating to the dismissal of John Maher, from the service of the Customs Department at Montreal. Presented 24th January, 1913.—*Mr. Murphy*.. .. ..*Not printed.*

61*wwww*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Peter Fougère, preventive and customs officer at Petit de Grat, Richmond county, N.S., and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to the same, and a detailed statement of the expenses of such investigation; and a copy of all papers relating to the appointment of his successor. Presented 24th January, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61*xxxx*. Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of James Grantmyre, preventive officer at Little Bras D'or, N.S., in the riding of North Cape Breton and Victoria. Presented 24th January, 1913.—*Mr. McKenzie.* *Not printed.*

61*yyyy*. Return to an Order of the House of the 15th January, 1913, for a return showing all the employees on the Soulanges Canal who have been dismissed from their duties since the 21st September, 1911, by whom each of these employees has been replaced, and for what causes were they dismissed. Presented 27th January, 1913.—*Mr. Bayer*.. .. ..*Not printed.*

61*zzzz*. Return to an Order of the House of the 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Andrew Melville, locktender at Cardinal, Ontario. Presented 27th January, 1913.—*Mr. Proulx*.. .. ..*Not printed.*

61*aaaaa*. Return to an Order of the House of 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of George Short, canal bridgetender at Cardinal, Ontario. Presented 27th January, 1913.—*Mr. Guthrie*.. .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61*bbbbb*. Return to an Order of the House of the 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of N. Broderick, locktender at Cardinal, Ontario. Presented 27th January, 1913.—*Mr. McMillan*.. .. ..*Not printed.*

61*ccccc*. Return to an Order of the House of the 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Thomas McLatchie, locktender at Cardinal, Ontario. Presented 27th January, 1913.—*Mr. Graham*.. .. ..*Not printed.*

61*ddddd*. Return to an Order of the House of the 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Elgin McLaughlin, locktender at Cardinal, Ontario. Presented 27th January, 1913.—*Mr. Emmerson*.. .. ..*Not printed.*

61*eeeee*. Return to an Order of the House of the 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Robert Robertson, locktender at Cardinal, Ontario. Presented 27th January, 1913.—*Mr. Lemieux*.. .. ..*Not printed.*

61*fffff*. Return to an Order of the House of the 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of William L. Gladstone, locktender at Cardinal, Ontario. Presented 27th January, 1913.—*Mr. Pugsley*.. .. ..*Not printed.*

61*ggggg*. Return to an Order of the House of the 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Byron VanCamp, locktender at Cardinal, Ontario. Presented 7th January, 1913.—*Mr. Murphy*.. .. ..*Not printed.*

61*hhhhh*. Return to an Order of the House of the 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Samuel English, canal bridge tender at Cardinal, Ontario. Presented 27th January, 1913.—*Mr. Carvell*.. .. ..*Not printed.*

61*iiiii*. Return to an Order of the House of the 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Edward F. Moran, locktender at Cardinal, Ontario. Presented 27th January, 1913.—*Mr. Oliver*.. .. ..*Not printed.*

67*jjjjj*. Return to an Order of the House of the 9th December, 1912, for a copy of all letters correspondence, documents and reports relating to the dismissal of William R. Fougere, of Frankville, Antigonish County, N.S., a sectionman on the Intercolonial railway, and for a statement in detail of the expenses connected with the investigations of the charges against him. Presented 27th January, 1913.—*Mr. Chisholm (Antigonish)*. *Not printed.*

61*kkkkk*. Return to an Order of the House of the 9th December, 1912, for a copy of all letters, correspondence, documents and reports relating to the dismissal of John Melanson, of Afton, Antigonish County, N.S., a sectionman on the Intercolonial railway, and for a statement in detail of the expenses connected with the investigation of the charges against him. Presented 27th January, 1913.—*Mr. Chisholm (Antigonish)*. *Not printed.*

61*lllll*. Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Ronald D. McDonald, fishery overseer, at Broad Cove, Inverness County, Nova Scotia, and of the evidence taken and report of investigation held by H. P. Duchemin in regard to the same; also a detailed statement of the expenses of such investigation. Presented 27th January, 1913.—*Mr. Chisholm (Inverness)*. *Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

51*mmmmm.* Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of John McLean, fishery officer at Gabarouse, Cape Breton South, N.S., and of evidence taken and reports of investigations held by H. P. Duchemin, in regard to the same. Presented 27th January, 1913.—*Mr. Carroll*.. .. ..*Not printed.*

61*nnnnn.* Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of A. R. Forbes, fishery overseer at North Sydney, Nova Scotia in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 27th January, 1913.—*Mr. McKenzie.* *Not printed.*

61*ooooo.* Return to an Order of the House of the 15th January, 1913, for a copy of all correspondence, letters, telegrams, complaints, petitions, and other documents concerning the dismissal of Sebastien Savoie, superintendent of the lobster hatchery at Shippigan, Gloucester County, N.B., and the appointment of his successor. Presented 27th January, 1913.—*Mr. Turgeon*.. .. ..*Not printed.*

61*ppppp.* Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of D. S. Hendsbee, weigher, reduction works, Canso, Guysborough County N.S., and of all evidence taken and report of investigation held by H. P. Duchemin in regard to the same; also a detailed statement of the expenses of such investigation. Presented 27th January, 1913.—*Mr. Sinclair*.. .. ..*Not printed.*

61*qqqqq.* Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of M. Muce, lightkeeper at Cheticamp Island, Inverness County, Nova Scotia, and of the evidence taken and report of investigation held by H. P. Duchemin in regard to the same; also a detailed statement of the expenses of such investigation. Presented 29th January, 1913.—*Mr. Chisholm (Inverness)*.. .. .. ..*Not printed.*

61*rrrrr.* Return to an Order of the House of the 15th January, 1913, for a copy of all papers, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Dr. J. D. R. Williams, collector of canal tolls at Cardinal, Ontario, and of the appointment of his successor. Presented 30th January, 1913.—*Mr. McMillan*.. .. ..*Not printed.*

61*sssss.* Return to an Order of the House of the 15th January, 1913, for a copy of all papers, letters, telegrams, evidence and other documents regarding the dismissal of John W. Bohan, preventive officer at Bath, Carleton County, N.B. Presented 3rd February, 1913.—*Mr. Carvell*.. .. ..*Not printed.*

61*ttttt.* Return to an Order of the House of the 15th January, 1913, for a copy of all papers, documents, correspondence, &c., relating to the dismissal of J. V. Smith, sub-collector of customs at Wood's Harbour, Shelburne County, N.S. Presented 3rd February, 1913.—*Mr. Law*.. .. ..*Not printed.*

61*uuuuu.* Return to an Order of the House of the 15th January, 1913, for a copy of all papers, letters, telegrams, evidence and other documents regarding the dismissal of John Y. Fleming, customs officer at Debec, Carleton County, N.B. Presented 3rd February, 1913.—*Mr. Carvell*.. .. ..*Not printed.*

61*vvvvv.* Return to an Order of the House of the 15th January, 1913, for a copy of all papers, letters, telegrams, evidence and other documents regarding the dismissal of Matthias Meagher, preventive officer at Debec, Carleton County, N.B. Presented 3rd February, 1913.—*Mr. Carvell*.. .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61*wwwww*. Return to an Order of the House of the 9th December, 1912, for a copy of all correspondence, letters, telegrams, complaints, and of the evidence given at investigation, if one was held, relating to the dismissal of Mr. A. J. Gosselin, acting preventive officer of customs at St. Albans, Vermont, through the port of St. Armand, County of Missisquoi. Presented 4th February, 1913.—*Mr. Kay*.. .. .. ..*Not printed.*

61*xxxxx*. Return to an Order of the House of the 4th December, 1912, for a copy of all papers, letters, telegrams, and petitions for and against the dismissal of James W. Bannon, preventive officer of customs at St. Agnes de Dundee, County of Huntingdon also a copy of the report of investigation and evidence, if any, submitted to investigating commissioner. Presented 4th February, 1913.—*Mr. Robb*.. .. ..*Not printed.*

61*yyyyy*. Return to an Order of the House of the 4th December, 1912, for a return showing the number of postmasters that have been dismissed in the County of Pictou since 1st October, 1911; the names of the postmasters who have been appointed to succeed them; the causes of the dismissals and all complaints and correspondence with respect to same, and of all reports of investigation where investigations have been held. Presented 4th February, 1913.—*Mr. Macdonald*.. .. ..*Not printed.*

61*zzzzz*. Return to an Address to His Royal Highness the Governor General of the 4th December, 1912, for a copy of all correspondence, orders in council, and all other papers or documents in any way relating to the dismissal of James Murphy from the position of postmaster at Tweed, Ontario. Presented 4th February, 1913.—*Mr. Murphy*.. .. ..*Not printed.*

61 (6*a*). Return to an Order of the House of the 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of H. B. Easton, immigration agent at Prescott, Ontario. Presented 4th February, 1913.—*Mr. Murphy*.. .. ..*Not printed.*

61 (6*b*). Return to an Order of the House of the 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of B. Hughes, immigration agent at Prescott, Ontario. Presented 4th February, 1913.—*Mr. Oliver*.. .. ..*Not printed.*

61 (6*c*). Return to an Order of the House of the 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of George Walsh, immigration agent at Prescott, Ontario. Presented 4th February, 1913.—*Mr. Oliver*.. .. ..*Not printed.*

61 (6*d*). Return to an Order of the House of the 15th January, 1913, for a copy of all papers, letters, telegrams, evidence and other documents regarding the dismissal of Newton S. Dow, immigration agent at McAdam Junction, York County, N.B. Presented 4th February, 1913.—*Mr. Carvell*.. .. ..*Not printed.*

61 (6*e*). Return to an Order of the House of the 15th January, 1913, for a copy of all papers, letters, telegrams, evidence and other documents regarding the dismissal of Oliver Hemphill, immigration agent at Debec, Carleton County, N.B. Presented 4th February, 1913.—*Mr. Carvell*.. .. ..*Not printed.*

61 (6*f*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Martin Johnston, preventive officer at Rea Islands, Richmond County, N.S Presented 6th February, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (6*g*). Return to an Order of the House of the 10th December, 1912, for a copy of all correspondence, letters, telegrams and other documents respecting the dismissal of J. E. Phaneuf, postmaster of St. Hugues, County of Bagot. Presented 6th February, 1913.—*Mr. Marcile*.. .. ..*Not printed*

61 (6*h*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Murdock McCutcheon, postmaster at Sonora, Guysborough County, N.S., and of all evidence taken and report of investigation held by Mr. H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 6th February, 1913.—*Mr. Sinclair*.. .. ..*Not printed*

61 (6*i*). Return to an Order of the House of the 15th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of Duncan Gillies, fishery overseer at Baddeck, C.B., in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 7th February, 1913.—*Mr. McKenzie*.. .. ..*Not printed.*

61 (6*j*). Return to an Order of the House of the 9th December, 1912, for a copy of all complaints, accusations, correspondence, petitions and of all documents and reports respecting the dismissal of Antonio Leduc, postmaster of St. Timothée, in the County of Beauharnois and the appointment of his successor. Presented 7th February, 1913.—*Mr. Papineau*.. .. ..*Not printed.*

61 (6*k*). Return to an Address to His Royal Highness the Governor General of the 4th December, 1912, for a copy of the recommendation to council, the order in council, all correspondence with the government or any member thereof, and of all letters, documents and papers in any way connected with the dismissal of Charles Arthur Bowman from the engineering branch of the Department of Railways and Canals.—*Mr. Clark (Red Deer)*.. .. ..*Not printed.*

61 (6*l*). Return to an Order of the House of the 29th January, 1913, for a copy of all papers, documents, evidence, reports, letters, correspondence, &c., relating to the dismissal of Elnathan D. Smith, fishery overseer, Shag Harbour, Shelburne County, N.S. Presented 11th February, 1913.—*Mr. Law*.. .. ..*Not printed.*

61 (6*m*). Return to an Order of the House of the 15th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of Donald McAulay, lightkeeper, Plaister, Baddeck Bay, C.B., riding of North Cape Breton and Victoria, and of the evidence taken and reports of investigation held by H. P. Duchemin in regard to the same, and a detailed statement of the expenses of such investigation. Presented 11th February, 1913.—*Mr. McKenzie.* *Not printed.*

61 (6*n*). Return to an Order of the House of the 29th January, 1913, for a copy of all papers, documents, letters, correspondence, &c., relating to the dismissal of John Fredericks, lightkeeper at East Jordan, Shelburne County, N.S. Presented 11th February, 1913.—*Mr. Law*.. .. ..*Not printed.*

61 (6*o*). Return to an Order of the House of the 29th January, 1913, for a copy of all papers, documents, letters, correspondence, &c., relating to the dismissal of John Fredericks, wharfinger at East Jordan, Shelburne County, N.S. Presented 11th February, 1913.—*Mr. Law*.. .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (6*p*). Return to an Order of the House of the 29th January, 1913, for a copy of all papers, documents, letters, correspondence, &c., relating to the dismissal of John C Morrison, harbour master at Shelburne, N.S. Presented 11th February, 1913.—*Mr. Maclean (Halifax)*.. .. ..*Not printed.*

61 (6*q*). Return to an Order of the House of the 15th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of Captain Roderick McDonald, tide waiter, at Big Bras D'Or, riding of North Cape Breton and Victoria, N.S., and of the evidence taken and reports of investigation held by H. P. Duchemin in regard to the same, and a detailed statement of the expenses of such investigation. Presented 11th February, 1913.—*Mr. McKenzie.*
Not printed.

61 (6*r*). Return to an Order of the House of the 15th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of James Maloney, customs officer at Dingwall, riding of North Cape Breton and Victoria, N.S., and of the evidence taken and reports of investigation held by H. P. Duchemin in regard to the same, and a detailed statement of the expenses of such investigation. Presented 11th February, 1913.—*Mr. McKenzie*.. .. .. ..*Not printed.*

61 (6*s*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of Hugh D. McEachern, customs officer at north side East Bay, Cape Breton, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 11th February, 1913.—*Mr McKenzie*.. .. ..*Not printed.*

61 (6*t*). Return to an Order of the House of the 29th January, 1913, for a copy of all papers, documents, evidence, reports and correspondence relating to the dismissal of Thos. H. Hall, sub-collector of customs at Sheet Harbour, N.S. Presented 11th February, 1913.—*Mr. Maclean (Halifax)*.. .. ..*Not printed.*

61(6*u*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of J. A. McNeil, customs officer at Grand Narrows, Nova Scotia, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 11th February, 1913.—*Mr. McKenzie.*
Not printed.

61 (6*v*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of George Burchell, custom house officer at Sydney Mines, Nova Scotia, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 11th February, 1913.—*Mr. McKenzie.*
Not printed.

61 (6*w*). Return to an Order of the House of the 15th January, 1913, for a copy of all papers, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of W. H. Saver, collector of customs at Cardinal, Ont., and the appointment of his successor. Presented 11th February, 1913.—*Mr. McMillan.*
Not printed.

CONTENTS OF VOLUME 27—*Continued.*

61 (6*x*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, telegrams and other documents relative to the dismissal of Captain George Livingstone, custom officer at Big Bras D'Or, Cape Breton, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same and a detailed statement of the expenses of such investigation. Presented 11th February, 1913.—*Mr. McKenzie.*
Not printed.

61 (*y*). Return to an Order of the House of the 10th December, 1912, for a copy of all correspondence, reports and other documents and papers relating to the dismissal of H. Lacasse, as postmaster at Wendover, County of Prescott, Ontario, and the appointment of his successor. Presented 13th February, 1913.—*Mr. Proulx.. ..Not printed*

61 (6*z*). Return to an Order of the House of the 9th December, 1912, for a copy of all correspondence and other papers connected with the removal of Harry A. Drigg, from the position of postmaster at Grassey Lake, Alberta. Presented 13th February, 1913.—*Mr. Buchanan.. .. ..Not printed*

61 (7*a*). Return to an Address to His Royal Highness the Governor General of the 9th December, 1912, for a copy of all papers, memoranda, orders in council, and correspondence relating to the dismissal of A. H. Stratton, late postmaster at Peterborough, Ont. Presented 17th February, 1913.—*Mr. Maclean (Halifax).*
Not printed

61 (7*b*). Return to an Order of the House of the 10th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Henry Burrell, postmaster, Yarmouth North, Yarmouth County, N.S., and the same information regarding the appointment of Henry Burrell's successor, and of the evidence taken and report of investigation held by Charles Lane in regard to the same, also a detailed statement of expenses of such investigation. Presented 18th February, 1913.—*Mr. Law.. .. ..Not printed.*

61 (7*c*). Return to an Order of the House of the 4th December, 1912, for a return showing all the postmasters dismissed by the present government in the County of Gloucester, the names of such persons, the reasons for their dismissal, nature of the charges made against them; also a copy of all correspondence connected with it, and reports of investigations in cases where such investigations were instituted. Presented 18th February, 1913.—*Mr. Turgeon.. .. ..Not printed.*

61 (7*d*). Return to an Order of the House of the 10th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Dr. Charles A. Webster, port physician at Yarmouth, County of Yarmouth, N.S., and the same information regarding the appointment of Dr. Webster's successor. Presented 18th February, 1913.—*Mr. Law.. .. ..Not printed*

61 (7*e*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, papers, charges and correspondence between the Department of Marine and Fisheries and all other persons, regarding the dismissal of Jos. Lord, keeper of lighthouses at Pointe à la Mule on the River Richelieu, Parish of St. Blaise, County of Saint Jean and Iberville and of all reports thereon with reference to the dismissal of the said Mr. Lord. Presented 19th February, 1913.—*Mr. Demers.. .. .. ..Not printed.*

61 (7*f*). Return to an Order of the House of the 15th January, 1913, for a copy of all correspondence, letters, telegrams and petitions concerning the dismissal of Henri Friolet, wharfinger at Caraquet, and Richard Southwood, wharfinger and agent of the Storm Signal Service at Bathurst, Gloucester County, N.B., and the appointment of their successors. Presented 19th February, 1913.—*Mr. Turgeon.. .. .. ..Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (*7g*). Return to an Order of the House of the 4th December, 1912, for a copy of all correspondence, letters, telegrams, reports and other documents, respecting the removal of Joseph L. Robichaud, lighthouse keeper at Miscou, County of Gloucester, and the appointment of his successor; also of all correspondence respecting the engagement of the engineer of fog alarm system attached to that station, and the certificates required by the Minister of Marine, showing the competence of that engineer; with the names of the new keeper and of the said engineer and their ages. Presented 19th February, 1913.—*Mr. Turgeon*.. .. ..*Not printed.*

61 (*7h*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Captain Pope as lighthouse keeper at Scatarie, Cape Breton South, N.S., and of the evidence taken and reports of investigation held by H. P. Duchemin, in regard to the same. Presented 19th February, 1913.—*Mr. Carroll*.. .. .. ..*Not printed*

61 (*7i*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Captain W. W. Lewis, as shipping master at Louisburg, Cape Breton South, Nova Scotia, and of evidence taken and reports of investigation held by H. P. Duchemin, in regard to the same. Presented 19th February, 1913.—*Mr. Carroll.*

Not printed.

61 (*7j*). Return to an Order of the House of the 4th December, 1912, for a return showing the names of postmasters that have been dismissed in the County of Bonaventure since 1st October, 1911; the names of the postmasters who have been appointed to succeed them; the causes of the dismissals and a copy of all complaints and correspondence with respect to same, and of all reports of investigations where such have been held, with the reasons given for not holding any such investigation, when not held. Presented 19th February, 1913.—*Mr. Marcil*.. .. ..*Not printed*

61 (*7k*). Return to an Order of the House of the 15th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of George Hines, lighthouse keeper at South Ingonish, riding of North Cape Breton and Victoria, N.S., and of the evidence taken and reports of investigation held by H. P. Duchemin, in regard to the same, and a detailed statement of the expenses of such investigation. Presented 20th February, 1913.—*Mr. McKenzie*..*Not printed.*

61 (*7l*). Return to an Order of the House of the 15th January, 1913, for a return showing a list of the lighthouse keepers removed by the present government in the County of Two Mountains, the names of such persons, the reasons for their dismissal, the nature of the complaints made against them; also a copy of all correspondence and petitions relating thereto, and reports of inquiries in the cases, where such have been held; and also the names of their successors. Presented 20th February, 1913.—*Mr. Ethier*.. .. ..*Not printed.*

61 (*7m*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of Archibald McDonald, preventive officer at Mull River, Inverness County, Nova Scotia. Presented 20th February, 1913.—*Mr. Chisholm (Inverness)*..*Not printed.*

61 (*7n*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, correspondence on file referring to the dismissal of Donald Chisholm, of Troadie, in the County of Antigonish, as preventive officer. Presented 20th February, 1913.—*Mr. Chisholm (Antigonish)*... .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (7*o*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, telegrams, reports and other documents relative to the dismissal of Edward C. Humphreys, of Trenton, N.S., as an officer of the Inland Revenue Department and to the appointment of his successor. Presented 20th February, 1913.—*Mr. Macdonald* ..*Not printed.*

61 (7*p*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of H. J. Fixott, port physician at Arichat, Richmond County, N.S. Presented 21st February, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61 (7*q*). Return to an Order of the House of the 10th December, 1912, for a copy of all correspondence, letters, telegrams and other documents relating to the dismissal of D. Morin as postmaster of St. Pie de Bagot, County of Bagot. Presented 21st February, 1913.—*Mr. Marcil* (*Bagot*).. .. ..*Not printed.*

61 (7*r*). Return to an Order of the House of the 10th December, 1912, for a copy of all correspondence, investigations and papers generally concerning the dismissal of Ernest Paquin, postmaster of St. Cecile de Levrard, County of Nicolet. Presented 21st February, 1913.—*Mr. Lemieux*.. .. ..*Not printed*

61 (7*s*). Return to an Address to His Royal Highness the Governor General of the 17th February, 1913, for a copy of all complaints and charges made against John R. McDonald, Indian agent at Heatherton, Antigonish County, of the recommendations to council and of the order in council made thereon, and of all letters, correspondence, and documents connected in any way with his dismissal. Presented 25th February, 1913.—*Mr. Chisholm* (*Antigonish*)... .. ..*Not printed*

61 (7*t*). Return to an Order of the House of the 15th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of Joseph Day, customs officer at Little Bras D'Or, C.B., in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 25th February, 1913.—*Mr. McKenzie*.. .. ..*Not printed.*

61 (7*u*). Return to an Address to His Royal Highness the Governor General of the 29th January, 1913, for a copy of all complaints against Duncan McLeod, appraiser of customs at Sherbrooke, Province of Quebec, of all information obtained as to his conduct through seizures of goods by special officers of customs and by investigation; of all reports of investigation; of the order in council dismissing said Duncan McLeod, and of all correspondence between him and the Department of Customs. Presented 25th February, 1913.—*Mr. McCrae*.. .. ..*Not printed.*

61 (7*v*). Return to an Order of the House of the 17th February, 1913, for a copy of all papers, letters, telegrams, evidence, &c., given at the investigation or investigations and of reports of such investigations, relating to the dismissal of Edouard D Chiasson, sub-collector of customs at Lamèque, Gloucester County, and the appointment of his successor. Presented 25th February, 1913.—*Mr. Turgeon*.. ..*Not printed.*

61 (7*w*). Return to an Order of the House of the 15th January, 1913, for a copy of all papers, letters, telegrams, evidence and other documents regarding the dismissal of George F. Briggs, customs officer at McAdam Junction, York County, N.B. Presented 25th February, 1913.—*Mr. Carvell*.. .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (7*x*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of William A. Duan, lightkeeper at Green Island, Richmond County, Nova Scotia, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 25th February, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61 (7*y*). Return to an Order of the House of the 29th January, 1913, for a copy of all papers, charges, correspondence, letters, telegrams and other documents relating to the dismissal of Thomas Cameron, preventive officer at Andover, N.B., and of the evidence taken and reports of investigation held by Mr. E. T. C. Knowles, in connection with the same. Presented 26th February, 1913.—*Mr. Michaud*.. .. ..*Not printed.*

61 (7*z*). Return to an Order of the House of the 29th January, 1913, for a copy of all complaints and charges made against Joseph McDonald, late of the customs office at Sydney, Cape Breton, Nova Scotia, and of all letters, telegrams and correspondence relating in any way to his dismissal and the appointment of his successor. Presented 26th February, 1913.—*Mr. Carroll*.. .. ..*Not printed*

61 (8*a*). Return to an Order of the House of the 29th January, 1913, for a copy of all complaints and charges made against Angus McGillivray, late of customs office at Glace Bay, Cape Breton South, Nova Scotia, and of all letters, telegrams and correspondence relating in any way to his dismissal and the appointment of his successor. Presented 26th February, 1913.—*Mr. Carroll*.. .. ..*Not printed.*

61 (8*b*). Return to an Order of the House of the 3rd February, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of Roderick Bain, boatman at New Campbellton, riding of North Cape Breton and Victoria, N.S., and of the evidence taken and reports of the investigation held by H. P. Duchemin, in regard to same, with a detailed statement of expenses of such investigation. Presented 26th February, 1913.—*Mr. McKenzie*.. .. ..*Not printed.*

61 (8*c*). Return to an Order of the House of the 15th January, 1913, for a copy of all papers, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of W. A. Scott, lockmaster at Cardinal, Ontario, and of the appointment of his successor. Presented 27th February, 1913.—*Mr. McMillan*. *Not printed.*

61 (8*d*). Return to an Order of the House of the 27th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Bert Johnson, lockman at Nicholson, Ontario. Presented 27th February, 1913.—*Mr. Turgeon*.. .. ..*Not printed.*

61 (8*e*). Return to an Order of the House of the 27th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of John Merrifield, lockmaster at Burritts Rapids, Ont., and the appointment of his successor. Presented 27th February, 1913.—*Mr. Chisholm*. *Not printed.*

61 (8*f*). Return to an Order of the House of the 15th January, 1913, for a copy of all papers, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Neil Cummings, lockmaster at Cardinal, Ontario, and of the appointment of his successor. Presented 27th February, 1913.—*Mr. McMillan*.. .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (8*g*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, papers, charges and correspondence between the Department of Railways and Canals and all other persons, regarding the dismissal of Mr. François Chagnon, lockkeeper at Saint Jean, County of Saint Jean and Iberville, and of all reports thereon with reference to the dismissal of the said Mr. Chagnon. Presented 27th February, 1913.—*Mr. Demers*.. .. ..*Not printed.*

61 (8*h*). Return to an Order of the House of the 15th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of Neil McNeil, bridge tender, Intercolonial railway, at Grand Narrows in the riding of North Cape Breton and Victoria. Presented 27th February, 1913.—*Mr. McKenzie*.. .. ..*Not printed.*

61 (8*i*). Return to an Order of the House of the 15th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of Archibald McKenzie, sectionman, Intercolonial railway, at Grand Narrows, in the riding of North Cape Breton and Victoria. Presented 27th February, 1913.—*Mr. McKenzie*.. .. ..*Not printed.*

61 (8*j*). Return to an Order of the House of the 15th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of John Fraser, bridge tender, Intercolonial railway, at Grand Narrows, in the riding of North Cape Breton and Victoria. Presented 27th February, 1913.—*Mr. McKenzie*.. .. ..*Not printed.*

61 (8*k*). Return to an Order of the House of the 27th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Demetrius Crozier, lockman at Merrickville, Ontario. Presented 27th February, 1913.—*Mr. Proulx*.. .. ..*Not printed.*

61 (8*l*). Return to an Order of the House of the 27th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Patrick Cussuk, lockman at Merrickville, Ontario Presented 27th February, 1913.—*Mr. Michaud*.. .. ..*Not printed.*

61 (8*m*). Return to an Order of the House of the 27th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Joseph H. Webster, lockman at Nicholson, Ontario. Presented 27th February, 1913.—*Mr. Pacaud*.. .. ..*Not printed.*

61 (8*n*). Return to an Order of the House of the 27th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Cyrus O'Neil, lockman at Nicholson, Ontario. Presented 27th February, 1913.—*Mr. Kyte*... .. ..*Not printed.*

61 (8*o*). Return to an Order of the House of the 27th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Michael Laughtin, bridgeman at Burritts Rapids, Ontario. Presented 27th February, 1913.—*Mr. Papineau*.. .. ..*Not printed.*

61 (8*p*). Return to an Order of the House of the 27th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of John McKay, bridgeman at Becketts, Ontario. Presented 27th February, 1913.—*Mr. Lanctot*.. .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (8*q*). Return to an Order of the House of the 27th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Edward Proctor, lockman at Burritts Rapids, Ont. Presented 27th February, 1913.—*Mr. Neely*.. .. ..*Not printed.*

61 (8*r*). Return to an Order of the House of the 27th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of William Morrison, lockman at Burritts Rapids, Ont. Presented 27th February, 1913.—*Mr. Cash*.. .. ..*Not printed.*

61 (8*s*). Return to an Order of the House of the 15th January, 1913, for a copy of all letters, documents, telegrams, reports, correspondence and recommendations in any way relating to the dismissal of Adam Henderson, bridgemaster at Cardinal, Ontario. and of the appointment of his successor. Presented 27th February, 1913.—*Mr. Murphy.* *Not printed.*

61 (8*t*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of James Feehan, fishery guardian or warden at Tracadie Harbour and Savage Harbour, Prince Edward Island. Presented 27th February, 1913.—*Mr. Hughes (Kings, P.E.I.)*.. .. ..*Not printed.*

61 (8*u*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of John C. McNeil, lighthouse keeper at Grand Narrows, in the riding of North Cape Breton and Victoria. Presented 27th February, 1913.—*Mr. McKenzie.* *Not printed.*

61 (8*v*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of A. A. Chisholm, fishery overseer at Margaree Forks, Inverness County, Nova Scotia. Presented 28th February, 1913.—*Mr. Chisholm (Inverness)*.. ..*Not printed.*

61 (8*w*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of Charles E. Aucoin, collector of customs at Cheticamp, Inverness County, Nova Scotia, and of the evidence taken and report of investigation held by Mr. H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 28th February, 1913.—*Mr. Chisholm (Antigonish).* *Not printed.*

61 (8*x*). Return to an Order of the House of the 17th February, 1913, for a copy of all complaints and charges made against Charles L. Gass, late postmaster at Bayfield, Antigonish County, of the evidence taken, if any, before Commissioner Duchemin, and of his report thereon and of all letters, telegrams and documents of every kind relating to his dismissal and the appointment of his successor. Presented 28th February, 1913.—*Mr. Chisholm (Antigonish)*.. .. ..*Not printed.*

61 (8*y*). Return to an Order of the House of the 17th February, 1913, for a copy of all letters and correspondence exchanged in reference to the dismissal of Cyprien Martin, of St. Basile, County of Madawaska, N.B., between the Department of Customs and the said Mr. Martin as preventive officer. Presented 28th February, 1913.—*Mr. Michaud*.. .. ..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

G1 (8*z*). Return to an Order of the House of the 9th December, 1912, for a copy of all complaints and charges made against Angus A. Boyd, postmaster at Boyd's post office Antigonish County, Nova Scotia, and of all letters, telegrams and correspondence relating in any way to his dismissal, and the appointment of a successor. Presented 28th February, 1913.—*Mr. Chisholm (Antigonish)*.. .. ..*Not printed*

G1 (9*a*). Return to an Order of the House of the 9th December, 1912, for a copy of all complaints and charges made against John B. Macdonald, postmaster at Glasburn, Antigonish County, Nova Scotia, and of all letters, telegrams and correspondence relating in any way to his dismissal, and the appointment of a successor. Presented 28th February, 1913.—*Mr. Chisholm (Antigonish)*.. .. ..*Not printed*

G1 (9*b*). Return to an Order of the House of the 9th December, 1912, for a copy of all complaints and charges made against Alex. G. Chisholm, postmaster at Ohio, Antigonish County, Nova Scotia, and of all letters, telegrams and correspondence relating in any way to his dismissal, and the appointment of a successor. Presented 28th February, 1913.—*Mr. Chisholm (Inverness)*.. .. ..*Not printed*

G1 (9*c*). Return to an Order of the House of the 9th December, 1912, for a copy of all complaints and charges made against John J. McLean, postmaster at Cross Roads, Ohio, Antigonish County, Nova Scotia, and of all letters, telegrams and correspondence relating in any way to his dismissal and the appointment of a successor. Presented 28th February, 1913.—*Mr. Chisholm (Inverness)*.. .. ..*Not printed*

G1 (9*d*). Return to an Order of the House of the 9th December, 1912, for a copy of all complaints and charges made against Dougald McDonald, postmaster at Doctors Brook, Antigonish County, Nova Scotia, and of all letters, telegrams and correspondence relating in any way to his dismissal, and the appointment of his successor. Presented 28th February, 1913.—*Mr. Chisholm (Antigonish)*.. .. ..*Not printed.*

G1 (9*e*). Return to an Order of the House of the 9th December, 1912, for a copy of all complaints and charges made against Dan. A. McInnes, postmaster at Georgeville, Antigonish County, Nova Scotia, and of all letters, telegrams, and correspondence relating in any way to his dismissal, and the appointment of his successor. Presented 28th February, 1913.—*Mr. Chisholm (Antigonish)*.. .. ..*Not printed.*

G1 (9*f*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, letters, correspondence, telegrams and other documents relating to the dismissal of E. A. Asker, harbour master at Campbellton. Presented 3rd March, 1913.—*Mr. Reid (Restigouche)*.. .. ..*Not printed.*

G1 (9*g*). Return to an Order of the House of the 10th February, 1913, for a copy of all papers, letters, documents and orders relative to the dismissal of Fred Shultz as caretaker of the armouries at Kentville, Nova Scotia, and of the appointment of William Shoop in his place and also for a statement of the stores in said armouries in the years 1910, 1911, 1912, respectively, and for a copy of all orders and regulations relative to the duties of such caretaker. Presented 3rd March, 1913.—*Mr. Macdonald. Not printed.*

G1 (9*h*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Dr. Freeman O'Neil, from the Marine Hospital a Louisburg, Cape Breton South, N.S., and of evidence taken and reports of investigation held by H. P. Duchemin, in regard to the same. Presented 10th March, 1913.—*Mr. Carroll*..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (9*i*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Leon N. Poirier, wharfinger at Descouse, Richmond County, N.S. Presented 10th March, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61 (9*j*). Return to an Order of the House of the 10th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Norman L. Trefry, shipping master at Yarmouth, County of Yarmouth, N.S., and the same information regarding the appointment of Mr. Trefry's successor. Presented 10th March, 1913.—*Mr. Law*.. .. ..*Not printed.*

61 (9*k*). Return to an Order of the House of the 15th January, 1913, for a copy of all papers, documents, correspondence, &c., relating to the dismissal of James Amereau'r, lighthouse keeper at New Edinburgh, Digby County, N.S. Presented 10th March, 1913.—*Mr. McLean (Halifax)*.. .. ..*Not printed*

61 (9*l*). Return to an Order of the House of the 29th January, 1913, for a copy of all papers, documents, evidence, reports, letters, correspondence, &c., relating to the dismissal of H. B. Manley, a clerk in the Dominion Lands Office at Saskatoon. Presented 10th March, 1913.—*Mr. McCraney*.. .. ..*Not printed*

61 (9*m*). Return to an Order of the House of the 29th January, 1913, for a copy of all correspondence, letters, telegrams, papers and other documents in connection with the dismissal of John Spicer, senior assistant of the Moosejaw Land Agency. Presented 10th March, 1913.—*Mr. Knowles*.. .. ..*Not printed.*

61 (9*n*). Return to an Order of the House of the 29th January, 1913, for a copy of all papers, letters, telegrams and other documents respecting the dismissal of Robert Pragnall from the position of agent of the Dominion Land Office at Swift Current and the appointment of his successor. Presented 10th March, 1913.—*Mr. Knowles.*
Not printed.

61 (9*o*). Return to an Order of the House of the 29th January, 1913, for a copy of all papers, documents, evidence, reports, letters, correspondence, &c., relating to the dismissal of G. M. Ullyot, a clerk in the Dominion Lands Office at Saskatoon. Presented 10th March, 1913.—*Mr. McCraney*.. .. ..*Not printed*

61 (9*p*). Return to an Order of the House of the 9th December, 1912, for a return showing the detail and number of dismissals from public offices by the present government to this date in the riding of Saskatoon, with the names of the dismissed occupants, the reasons for their dismissals, the complaints against such officials, and all correspondence with respect to the same, and of all reports of investigations, in easewhere such were held. Presented 17th March, 1913.—*Mr. McCraney*.. .. ..*Not printed*

61 (9*q*). Return to an Order of the House of the 17th February, 1913, for a copy of all letters, petitions, telegrams, complaints, evidence, reports, affidavits and other documents in the Department of Inland Revenue, respecting the dismissal of J. N. Poirier, Collector of Excise at Victoriaville, County of Arthabaska, and the names of the witnesses interested, with a copy of the evidence and a statement of expenses of the said inquiry. Presented 17th March, 1913.—*Mr. Brouillard*.. .. ..*Not printed.*

61 (9*r*). Return to an Order of the House of the 15th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of John G. Morrison, fishery inspector at Englishtown, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 18th March, 1913.—*Mr. Kyte*.. .. ..*Not printed*

CONTENTS OF VOLUME 27—*Continued.*

61 (9*s*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Edward Landry, lightkeeper, Petite de Grat, Richmond County, N.S., and of all evidence taken and report of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 18th March, 1913.—*Mr. Kyte*.. .. ..*Not printed.*

61 (9*t*). Return to an Order of the House of the 27th January, 1913, for a copy of all documents, petitions, letters, correspondence, inquiries and reports concerning the dismissal of Evariste Talbot, employed in the general freight office of the Intercolonial. Presented 18th March, 1913.—*Mr. Lapointe (Kamouraska).....Not printed*

61 (9*u*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, petitions, telegrams, complaints, evidence, reports and other papers and documents in the possession of the Department of Railways or any department of the government, relating to the dismissal of Philip H. Ryan, an employee of the Intercolonial railway at Mulgrave, N.S., and if there was an investigation, the names of all witnesses examined, a copy of the evidence, and a detailed statement of the expenses of such investigation. Presented 18th March, 1913.—*Mr. Sinclair..Not printed.*

61 (9*v*). Return to an Order of the House of the 3rd February, 1913, for a return showing how many postmasters and other post office employees were removed from office respectively, from the 1st of July, 1896, to the 1st of October, 1911, and the number in each province; and from the 10th of October, 1911, up to date, with the number in each province; also the number of post offices in operation in each province on the 1st July, 1896. Presented 26th March, 1913.—*Mr. Rainville.....Not printed.*

61 (9*w*). Return to an Address to His Royal Highness the Governor General of the 3rd February, 1913, for a copy of all orders in council, and of all letters, telegrams, complaints, petitions and of all other documents of any kind, in the possession of the government, or of any department or official thereof, in any way relating to or concerning the dismissal of Dr. Clarence T. Campbell, post office inspector at London, Ontario. Presented 26th March, 1913.—*Mr. Ross.....Not printed.*

61 (9*x*). Return to an Order of the House of the 9th December, 1912, for a return showing the number of postmasters that have been dismissed in the County of Missisquoi since 1st October, 1911, the names of the postmasters who have been appointed to succeed them, the cause of the dismissals and a copy of all complaints and correspondence with respect to the same, and of all reports of investigations where such have been held. Presented 26th March, 1913.—*Mr. Kay.....Not printed.*

61 (9*y*). Return to an Order of the House of the 27th January, 1913, for a copy of all letters, petitions, telegrams, complaints, evidence, reports and other papers and documents in the possession of the Post Office Department, regarding any change in any post office or postmastership in Bonaventure County, between 5th December, 1912, up to date. Presented 26th March, 1913.—*Mr. Marcil (Bonaventure).....Not printed.*

61 (9*z*). Return to an Address to His Royal Highness the Governor General of the 9th December, 1912, for a copy of all papers, documents, correspondence, orders in council, &c., relative to the dismissal of S. A. Johnson, late postmaster at Petite Rivière, Lunenburg County, N.S. Presented 26th March, 1913.—*Mr. MacLean (Halifax).*
Not printed.

CONTENTS OF VOLUME 27—*Continued.*

61 (10*a*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams, and other documents relative to the dismissal of Murdock McKenzie, postmaster at Millville Boulardarie, Nova Scotia, in the riding of North Cape Breton and Victoria. Presented 26th March, 1913.—*Mr. McKenzie* ....*Not printed.*

61 (10*b*). Return to an Order of the House of the 9th December, 1912, for a copy of all documents, correspondence and telegrams relating to the dismissal of James Stewart, postmaster at Middleton, Antigonish County, and the appointment of his successor. Presented 26th March, 1913.—*Mr. Chisholm (Antigonish)*.....*Not printed*

61 (10*c*). Return to an Order of the House of the 9th December, 1912, for a copy of all correspondence, telegrams and reports relating to the dismissal of Lauchlin McNeil, postmaster at New France, County of Antigonish, and the appointment of his suc- Presented 26th March, 1913.—*Mr. Chisholm (Antigonish)*.....*Not printed.*

61 (10*d*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams, and other documents relative to the dismissal of Frank Dunlop, postmaster at Groves Point, Nova Scotia, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expense of such investigation. Presented 26th March, 1913.—*Mr. McKenzie.*

Not printed.

61 (10*e*). Return to an Order of the House of the 10th December, 1912, for a copy of all letters, telegrams, complaints, petitions and other documents relating to the investigation of A. W. Salsman, postmaster at Middle Country Harbour, N.S., and to the appointment of his successor. Presented 26th March, 1913.—*Mr. Sinclair.*

Not printed.

61 (10*f*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Richard Conroy, postmaster at Cross Roads, County Harbour, Guysborough County, N.S., and of all evidence taken and report of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 26th March, 1913.—*Mr. Sinclair*.....*Not printed.*

61 (10*g*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Abner Carr, postmaster at St. Francis Harbour, Guysborough County, N.S., and of all evidence taken and report of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of expenses of such investigation. Presented 26th March, 1913.—*Mr. Sinclair*.....*Not printed.*

61 (10*h*). Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Parker Sangster, postmaster, Upper New Harbour, Guysborough County, NS., and of all evidence taken and report of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 26th March, 1913.—*Mr. Sinclair*.....*Not printed.*

61 (10*i*). Return to an Address to His Royal Highness the Governor General of the 4th December, 1912, for a copy of all correspondence, orders in council and all other papers or documents in any way relating to the dismissal of Alexander Marion, from the position of postmaster at Rockland, Ontario. Presented 26th March, 1913.—*Mr. Murphy* ....*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (10*j*). Return to an Order of the House of the 4th December, 1912, for a copy of the evidence taken and the report made by each commissioner appointed since 1st of November, 1911, to conduct an investigation into charges of offensive partizanship made against postmasters in the County of Russell. Presented 26th March, 1913.—*Mr. Murphy* .....*Not printed.*

61 (10*k*). Return to an Order of the House of the 9th December, 1912, for a copy of all papers, documents, evidence, reports, findings and correspondence, relating to the dismissal of Mathew Boutilier, recently postmaster at Mushaboom, Halifax County, N.S. Presented 26th March, 1913.—*Mr. MacLean (Halifax)*.....*Not printed*

61 (10*l*). Return to an Order of the House of the 29th January, 1913, for a return showing the names of the postmasters in the County of Joliette, who have been dismissed from 1896 to September, 1911; their respective parishes; dates of their dismissals; the reasons alleged; whether an inquiry was made in each case; on whose recommendation in each case the dismissals were made; names of successors in each case, and on whose recommendation were they appointed. Presented 26th March, 1913.—*Mr. Guilbault.* *Not printed.*

61 (10*m*). Return to an Order of the House of the 29th January, 1913, for a copy of all papers, documents, evidence, reports, letters, correspondence, &c., relating to the dismissal of T. Doane Crowell, postmaster at Shag Harbour, Shelburne County, N.S., and the appointment of his successor. Presented 26th March, 1913.—*Mr. Law.* *Not printed*

61 (10*n*). Return to an Order of the House of the 22nd January, 1913, for a return showing the postmasters who have been dismissed in the County of Vaudreuil, the dates of their appointment, the cause of their dismissal and by whom their dismissal was requested. Presented 26th March, 1913.—*Mr. Boyer*.....*Not printed.*

61 (10*o*). Return to an Order of the House of the 29th January, 1913, for a copy of all papers, documents, letters, correspondence, &c., relating to the dismissal of Mrs. Spinney, postmistress at Upper Port La Tour, Shelburne County, N.S. Presented 26th March, 1913.—*Mr. Law*.....*Not printed.*

61 (10*p*). Return to an Order of the House of the 29th January, 1913, for a return showing the number of postmasters dismissed in the County of Rimouski since 21st September, 1911, giving their names. Presented 26th March, 1913.—*Mr. Lapointe (Kamouraska)* .....*Not printed.*

61 (10*q*). Return to an Order of the House of the 4th December, 1912, for a return showing the detail and number of dismissals from public offices by the present government to this date in the riding of Wright, giving the names of the dismissed occupants, the reasons for their dismissal, the complaints against such officials, and a copy of all correspondence with respect to the same, with all reports of investigations where such were held. Presented 27th March, 1913.—*Mr. Devlin*.....*Not printed*

61 (10*r*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of John R. McLennan, janitor of the public building at Inverness Town, Inverness County, Nova Scotia, and of the evidence taken and report of investigation held by Mr. H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 28th March, 1913.—*Mr. Chisholm (Inverness)*.....*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (10*s*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, and other documents relating to the dismissal of James Arbuckle, caretaker of the public buildings at Pictou, and the appointment of two successors in his stead Presented 28th March, 1913.—*Mr. Macdonald*.....*Not printed.*

61 (10*t*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams, and other documents relative to the dismissal of Mary Dunlop, telegraph operator at Groves Point, Cape Breton County, Nova Scotia, in the riding of North Cape Breton and Victoria. Presented 28th March, 1913.—*Mr. McKenzie* .....*Not printed.*

61 (10*u*). Return to an Order of the House of the 4th December, 1912, for a return showing the foremen employed at the various public works in the County of Gloucester on the 21st of September, 1911, who have been dismissed since by the present administration, containing their names, reasons of dismissal, nature of the charges made against them, also a copy of all correspondence connected with the same and reports of inquiries, in cases where such inquiries have been instituted. Presented 28th March, 1913.—*Mr. Turgeon*.....*Not printed*

61 (10*v*). Return to an Order of the House of the 3rd February, 1913, for a copy of all letters, telegrams, papers and documents relative to the dismissal of Captain Lyons of the dredge *Northumberland*, and the appointment of his successor. Presented 28th March, 1913.—*Mr. Macdonald*.....*Not printed.*

61 (10*w*). Return to an Address to His Royal Highness the Governor General of the 4th December, 1912, for a copy of all correspondence, orders in council and all other papers or documents in any way relating to the dismissal of James McCartin, from the position of inspector of the concrete work forming part of the contract for the construction of the The Plaza at the City of Ottawa Presented 28th March, 1913.—*Mr. Murphy* .....*Not printed.*

61 (10*x*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Robert C. Morrison, postmaster at St. Peters, Richmond County, N.S., and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation, together with a copy of all recommendations, letters, telegrams and other papers relating to the appointment of Mr. Morrison's successor. Presented 31st March, 1913.—*Mr. Kyte.* *Not printed*

61 (10*y*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams, and other documents relative to the dismissal of Richard Dugas, storm signal attendant at Alder Point, Nova Scotia, in the riding of North Capo Breton and Victoria. Presented 4th April, 1913.—*Mr. McKenzie.* *Not printed.*

61 (10*z*). Return to an Order of the House of the 20th January, 1913, for a return showing the names of all officials of the Marine and Fisheries Department who have been dismissed or removed in the County of Pictou, the reasons of the same, the evidence taken at any investigation held in regard to them, and the reports of said investigations, the names of their successors, and a copy of all letters, charges, complaints and recommendations from any person or persons in regard to the said removals or dismissals, or in regard to the appointment of their successors. Presented 4th April 1913.—*Mr. Macdonald*.....*Not printed*

CONTENTS OF VOLUME 27—*Continued.*

61 (11*a*). Return to an Order of the House of the 3rd March, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of William L. Munro, lightkeeper at White Head, Guysborough County, N.S., and of all evidence taken and report of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 4th April, 1913.—*Mr. Sinclair*.....*Not printed.*

61 (11*b*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, telegrams, correspondence, reports and documents touching the dismissals of Alexander R. McAdam as fishery officer for the County of Antigonish, N.S., and the appointment of his successor. Presented 4th April, 1913.—*Mr. Chisholm (Antigonish).* *Not printed.*

61 (11*c*). Return to an Order of the House of the 19th February, 1913, for a copy of all letters, petitions, telegrams, complaints, evidence, reports and other papers and documents in the possession of the Marine and Fisheries Department, or any department of the government, relating to the dismissal of Stephen C. Richard, lightkeeper at Charlos Cove, N.S., and if there was an investigation, the names of all witnesses examined, a copy of the evidence, and a detailed statement of the expenses of such investigation. Presented 4th April, 1913—*Mr. Sinclair*.....*Not printed.*

61 (11*d*). Supplementary to an Order of the House of the 7th February, 1912, for a return showing for each department of the government the names, post office addresses, offices, employment, and salaries of all persons employed either in the inside or outside service thereof, and of such persons not in the Civil Service, employed by the government in any department, on the tenth day of October, 1911, who have been removed from office or employment by dismissal; specifying in each case the manner of and grounds of such dismissals and the length of notice given to the persons removed, and also indicating in each case whether an inquiry was or was not held prior to such dismissal. Presented 7th April, 1913.—*Mr. Kyte*.....*Not printed.*

61 (11*e*). Return to an Order of the House of the 7th December, 1912, for a return showing the public officers removed by the present government in the district of Lotbinière, with the names and duties of such persons, the reasons of their dismissal, the nature of the complaints made against them, also a copy of all correspondence relating thereto and reports of inquiries in the cases where such inquiries have been held. Presented 9th April, 1913.—*Mr. Fortier*.....*Not printed*

61 (11*f*). Return to an Order of the House of the 29th January, 1913, for a copy of all complaints and charges made against Miss Gertie Lewis, as postmistress at Main-a-dieu, Cape Breton South, N.S., and of all letters, telegrams and correspondence relating in any way to her dismissal and the appointment of a successor. Presented 9th April, 1913.—*Mr. Carroll* .....*Not printed.*

61 (11*g*). Return to an Order of the House of the 11th December, 1912, for a copy of all correspondence, letters, telegrams and other documents relating to the dismissal of John Taylor, late postmaster at Carnduff, Sask., and of all reports of investigation held, &c. Presented 9th April, 1913.—*Mr. Turriff*.....*Not printed.*

61 (11*h*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Frederick Mitchell, from the position of postmaster at Dominion, Cape Breton South, N.S., and of the evidence taken and reports of investigation held by H. P. Duchemin, in regard to the same. Presented 9th April, 1913.—*Mr. Carroll.* *Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (11*i*). Return to an Order of the House of the 29th January, 1913, for a copy of all papers, letters, telegrams and other correspondence relating to the dismissal of Thomas J. Sears, postmaster at Lochaber, N.S., and the appointment of his successor; of the evidence taken, and of the report thereon made by Commissioner Duchemin, on the charges, if any, made against the dismissed postmaster. Presented 9th April, 1913.—*Mr. Chisholm* (*Antigonish*).. .. ..*Not printed.*

61 (11*j*). Return to an Order of the House of the 29th January, 1913, for a copy of all correspondence, letters, telegrams, papers and other documents in connection with the dismissal of the postmaster at Alsask, Saskatchewan. Presented 9th April, 1913.—*Mr. Knowles*..... ....*Not printed*

61 (11*k*). Return to an Order of the House of the 3rd March, 1913, for a copy of all letters, telegrams, instructions and other papers and documents in the possession of the Department of Marine and Fisheries, or any officer thereof, relating to the dismissal or appointment of fishery guardians or fishery officers, in the County of Guysborough, N.S., bearing date since the 10th day of October, 1911. Presented 9th April, 1913.—*Mr. Sinclair*..... .....*Not printed*

61 (11*l*). Return to an Order of the House of the 11th December, 1912, for a copy of all complaints and charges made against John R. Morrison, postmaster at Oban, Richmond County, N.S., and of all letters, telegrams and correspondence relating in any way to his dismissal, and the appointment of a successor. Presented 14th April, 1913.—*Mr. Kyte*..... ....*Not printed.*

61 (11*m*). Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of A. G. McDonald, postmaster of North East Margaree, Inverness County, Nova Scotia, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 14th April, 1913.—*Mr. Chisholm* (*Inverness*)..*Not printed.*

61 (11*n*). Return to an Order of the House of the 9th December, 1912, for a return showing in detail the number of dismissals from public office by the present government to this date, in the constituency of Qu'Appelle, with the names of the dismissed officers, and the reason for their dismissal, the complaints against such officials and a copy of all correspondence, petitions, papers and documents with respect to the same, and of all notes of evidence and reports of investigations in cases where they have taken place. Presented 14th April, 1913.—*Mr. Thomson* (*Qu'Appelle*).....*Not printed*

61 (11*o*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, petitions, telegrams, complaints, evidence, reports and other papers and documents in the possession of the Department of Marine and Fisheries or any department of the government, relating to the dismissal of David Reid, fishery officer at Port Hilford, N.S., and if there was an investigation, the names of the witnesses examined, a copy of the evidence, and a detailed statement of the expenses of each investigation. Presented 15th April, 1913.—*Mr. Sinclair*.....*Not printed.*

61 (11*p*). Return to an Order of the House of the 15th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Robert Musgrave, postmaster at North Sydney, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 15th April, 1913.—*Mr. McKenzie*.....*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

G1 (11*q*). Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of A. D. Archibald, postmaster at Glenelg, Guysborough County, N.S., and of all evidence taken and report of investigation held by H. P. Duchemin in regard to the same; also a detailed statement of the expenses of such investigation. Presented 15th April, 1913.—*Mr. Chisholm (Inverness)*.....*Not printed*

G1 (11*r*). Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Leon N. Poirier, postmaster at Descouse, Richmond County, N.S., and of the evidence taken and of the reports of investigation held by H. P. Duchemin in regard to the same and a detailed statement of the expenss of such investigation; and a copy of all papers relating to the appointment of his successor. Presented 15th April, 1913.—*Mr. Kyte*.....*Not printed.*

G1 (11*s*). Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Norman McAskill, postmaster at Framboise, Richmond County, N.S., and of the evidence taken and of the report of investigation held by H. P. Duchemin in regard to the same, and a detailed statement of the expenses of such investigation; and a copy of all papers relating to the appointment of his successor. Presented 15th April, 1913.—*Mr. Kyte*.....*Not printed.*

G1 (11*t*). Return to an Order of the House of the 11th December, 1912, for a copy of all papers, documents and correspondence relating to the dismissal of A. T. Doucet, postmaster and collector of customs at Salmon River, Digby County, N.S. Presented 15th April, 1913.—*Mr. Maclean (Halifax)*.. .. ..*Not printed.*

G1 (11*u*). Return to an Order of the House of the 29th January, 1913, for a copy of all complaints and charges made against Mrs. Annie Gallivan, as postmistress at Whitney Pier, Cape Breton South, Nova Scotia, and of all letters, telegrams and correspondence relating in any way to her dismissal and the appointment of a successor. Presented 15th April, 1913.—*Mr. Carroll*.....*Not printed.*

G1 (11*v*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Wm. J. Paquet, postmaster at Souris, P.E.I. Presented 15th April, 1913.—*Mr. Hughes (Kings, P.E.I.)*.. .. ..*Not printed.*

G1 (11*w*). Return to an Order of the House of the 27th January, 1913, for a copy of all documents, correspondence, petitions and recommendations, &c., relating to the dismissal of the postmaster at St. Anaclet, County of Rimouski, during the year 1912, and of the appointment of his successor. Presented 15th April, 1913.—*Mr. Lapointe (Kamouraska)*.. .. ..*Not printed*

G1 (11*x*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of George Gunn, postmaster at French Village, Prince Edward Island. Presented 15th April, 1913.—*Mr. Hughes (Kings, P.E.I.)*.. .. ..*Not printed.*

G1 (11*y*). Return to an Order of the House of the 4th December, 1912, for a return showing the detail and number of dismissals from public offices by the present government to this date in the riding of Mackenzie, together with the names of the dismissed occupants, the reasons for their dismissal, the complaints against such officials, and a copy of all correspondence with respect to the same, and of all reports of investigations, where any such were held. Presented 15th April, 1913.—*Mr. Cash*..*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (11*z*). Return to an Order of the House of the 7th April, 1913, for a copy of all charges investigated by Commissioner W. J. Code, and also of the evidence taken and the report made by the said commissioner. Presented 16th April, 1913.—*Mr. Murphy.*
Not printed.

61 (12*a*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of D. F. McLean, fishery overseer at Port Hood, Inverness County, N.S., and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 16th April, 1913.—*Mr. Chisholm (Inverness).....Not printed*

61 (12*b*). Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of J. Scott Nelson, postmaster at Louisdale, Richmond County, N.S., and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to the same, and a detailed statement of the expenses of such investigation; and a copy of all papers relating to the appointment of his successor. Presented 16th April, 1913. —*Mr. Kyte.....Not printed*

61 (12*c*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Joseph McMullen, from the post office at Bridgeport, Cape Breton South, Nova Scotia, and of evidence taken and reports of investigation held by H. P. Duchemin, in regard to the same. Presented 16th April, 1913.—*Mr. Carroll....Not printed.*

61 (12*d*). Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Frederick A. Martell, postmaster at L'Ardoise, Richmond County, N.S., and of the evidence taken and of the reports of investigation held by H. P. Duchemin, in regard to the same, and a detailed statement of the expenses of such investigation; and a copy of all papers relating to the appointment of his successor. Presented 16th April, 1913.—*Mr. Kyte.....Not printed.*

61 (12*e*). Return to an Order of the House of the 11th December, 1912, for a copy of all representations, statements and complaints as to political activity made against John A. Macdonald, postmaster at McArras Brook, Antigonish County, and of all correspondence relating to the charges made against him and of the report of Commissioner Duchemin on said charges. Presented 16th April, 1913.—*Mr. Chisholm (Antigonish).....Not printed*

61 (12*f*). Return to an Address to His Royal Highness the Governor General of the 7th December, 1911, for a copy of all papers, correspondence and orders in council in connection with and relating to the dismissal from office of public officials from each of the departments of government since the 1st day of October last past, including both Inside and Outside Service. Presented 18th April, 1913.—*Mr. Carvell.....Not printed.*

61 (12*g*). Return to an Address to His Royal Highness the Governor General of the 3rd March, 1913, for a copy of all papers, documents, correspondence, evidence, order in council, &c., relative to the dismissal of Edward Doucett, sub-collector of customs, Digby County, N.S. Presented 21st April, 1913.—*Mr. McLean (Halifax).*
Not printed.

61 (12*h*). Return to an Address to His Royal Highness the Governor General of the 3rd March, 1913, for a copy of all papers, documents, correspondence, evidence, orders in council, &c., relative to the dismissal of Mr. LeBlanc, sub-collector of customs, Church Point, Digby County, N.S. Presented 21st April, 1913.—*Mr. McLean (Halifax).*
Not printed

CONTENTS OF VOLUME 27—*Continued.*

61 (12*i*). Return to an Order of the House of the 19th March, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of John C. Bourinot, chief customs officer at Port Hawkesbury, Inverness County, Nova Scotia, and of the evidence taken and report of investigation held by Mr. H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 21st April, 1913.—*Mr. Chisholm (Inverness).*
Not printed.

61 (12*j*). Return to an Order of the House of the 31st March, 1913, for a copy of all charges, evidence, correspondence, letters and telegrams in the Department of Railways and Canals since the 21st day of September, 1911, relating to the dismissal of Alexander E. Morrison, Point Tupper, N.S., from the service of the Intercolonial railway, and of all recommendations for the appointment of his successor. Presented 21st April, 1913.—*Mr. Kyte*.. .. ..*Not printed*

61 (12*k*). Return to an Order of the House of the 3rd February, 1913, for a copy of all letters, telegrams, reports and other papers and documents received from the officers of the Canadian Brotherhood of Railway Employees, by the Department of Labour, or of the Department of Railways and Canals, between the 1st day of January, 1912, and the 25th day of January, 1913, relating to investigations and dismissals of employees for political partizanship, and of the replies thereto. Presented 22nd April, 1913.—*Mr. Sinclair*..... .....*Not printed.*

61 (12*l*). Return to an Order of the House of the 31st March, 1913, for a copy of all complaints and charges against James Falconer, of Newcastle, County of Northumberland, New Brunswick, as correspondent of the *Labour Gazette* at Newcastle, and of all letters, telegrams and other correspondence relating in any way to his dismissal and the appointment of a successor. Presented 22nd April, 1913.—*Mr. Loggie*..*Not printed.*

61 (12*m*). Return to an Order of the House of the 19th March, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of John B. Chisholm, lightkeeper at Port Hastings, Inverness County, Nova Scotia, and the evidence taken and report of investigation held by Mr. H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 24th April, 1913.—*Mr. Chisholm (Inverness)*.....*Not printed.*

61 (12*n*). Return to an Order of the House of the 7th April, 1913, for a copy of all correspondence, telegrams, charges and other documents, relating to the dismissal of Epiphane Nadeau, immigration agent at St. Leonard, Victoria County, N.B. Presented 25th April, 1913.—*Mr. Michaud*.. .. ..*Not printed.*

61 (12*o*). Return to an Order of the House of the 31st March, 1913, for a copy of all charges, correspondence, letters, telegrams, and other documents relative to the dismissal of D. J. Morrison, boatman in the customs service at Big Bras D'or, North Cape Breton and Victoria, N.S., and of the evidence taken and of reports of the investigation held by H. P. Duchemin, in regard to the same, with a detailed statement of expenses of such investigation. Presented 25th April, 1913.—*Mr. McKenzie.*
Not printed

61 (12*p*). Return to an Order of the House of the 31st March, 1913, for a copy of all charges, correspondence, letters, telegrams, and other documents relative to the dismissal of Rod McLeod, boatman in the customs service at Big Bras D'or, North Cape Breton and Victoria, N.S., and of the evidence taken and of reports of the investigation held by H. P. Duchemin, in regard to the same, with a detailed statement of expenses of such investigation. Presented 25th April, 1913.—*Mr. McKenzie.*
Not printed.

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61 (12*q*). Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of D. McLachlin, postmaster at Marble Mountain, Inverness County, Nova Scotia, and of the evidence taken and report of investigation held by H. P. Duchemin in regard to the same; also a detailed statement of the expenses of such investigation. Presented 25th April, 1913.—*Mr. Chisholm (Inverness).. .. ..Not printed.*

61 (12*r*). Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Abram LeBlanc, postmaster at West Arichat, Richmond County, N.S., and of the evidence taken and reports of investigation held by H. P. Duchemin in regard to the same and a detailed statement of the expenses of such investigation, and a copy of all papers relating to the appointment of his successor. Presented 25th April, 1913.—*Mr. Kyte..... .....Not printed.*

61 (12*s*). Return to an Order of the House of the 11th December, 1912, for a copy of all correspondence, letters, telegrams and other documents relating to the dismissal of Charles J. Lafford, postmaster at Grand Grove, Richmond County, N.S., and of all evidence taken and report of investigation held by H. P. Duchemin in regard to the same; also a detailed statement of the expenses of such investigation. Presented 25th April, 1913.—*Mr. Kyte..... .....Not printed*

61 (12*t*). Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of W. S. Lawrence, postmaster at Margrave Harbour, Inverness County, Nova Scotia, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 25th April, 1913.—*Mr Chisholm (Inverness).. .. ..Not printed.*

61 (12*u*). Return to an Order of the House of the 11th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of John K. McDonald, postmaster at Whycocomagh, Inverness County, Nova Scotia, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 25th April, 1913.—*Mr. Chisholm (Inverness).....Not printed*

61 (12*v*). Return to an Order of the House of the 31st March, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Captain P. J. Wilcox, from the customs office at Louisburg, Cape Breton South, Nova Scotia, and of evidence taken and reports of investigations held by H. P. Duchemin, in regard to the same. Presented 29th April, 1913.—*Mr. Carroll.*

Not printed

61 (12*w*). Return to an Order of the House of the 31st March, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of M. J. McKennon, from the customs office at Glace Bay, Cape Breton South, Nova Scotia, and of evidence taken and reports of investigation held by H. P. Duchemin, in regard to the same. Presented 29th April, 1913.—*Mr. Carvell.....Not printed*

61 (12*x*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of Captain John Arsenault, telegraph line repairer at Alder Point, Cape Breton, in the riding of North Cape Breton and Victoria, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to same, and a detailed statement of the expenses of such investigation. Presented 29th April, 1913.—*Mr. McKenzie.*

Not printed.

CONTENTS OF VOLUME 27—*Continued.*

61 (12*y*). Return to an Order of the House of the 9th December, 1912, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Mrs. John Arsenault, telegraph operator at Alder Point, N.S., in the riding of North Cape Breton and Victoria. Presented 2nd May, 1913.—*Mr. McKenzie.*
Not printed

61 (12*z*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, petitions, telegrams, complaints, evidence, reports and other papers and documents in the possession of the Department of Railways and Canals or any department of the government, relating to the dismissal of A. J. Wilkinson, at Mulgrave, N.S. and if there was an investigation, the names of all witnesses examined and a detailed statement of the expenses of such investigation. Presented 2nd May, 1913.—*Mr. Sinclair*.....*Not printed.*

61 (13*a*). Charges made against Mr. H. A. Bayfield, superintendent of dredging, British Columbia.—(*Senate*).. .. ..*Not printed.*

61 (13*b*). Return to an Order of the House of the 31st March, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of H. G. McKay, lighthouse keeper at Bird Island, Big Bras D'or, North Cape Breton and Victoria, and of the evidence taken, and of reports of the investigation held by H. P. Duchemin, in regard to the same, with a detailed statement of expenses of such investigation. Presented 5th May, 1913.—*Mr. McKenzie*.....*Not printed.*

61 (13*c*). Return to an Order of the House of the 10th March, 1913, for a copy of all reports, charges, and correspondence in the office of the Department of Marine and Fisheries relating to charges of political partizanship against Michael O'Brien, lightkeeper at Bear Island, Richmond County, N.S., and of the instructions issued to H. P. Duchemin, commissioner, to investigate the same together with the Commissioner's report and finding thereon, and his expenses of holding such investigations. Presented 7th May, 1913.—*Mr. Kyte*.....*Not printed.*

61 (13*d*). Return to an Order of the House of the 17th February, 1913, for a copy of all correspondence, letters, telegrams, reports, recommendations and other documents bearing on or having relation to the dismissal of J. H. Leduc, as medical port officer of the port of Three Rivers, P.Q. Presented 7th May, 1913.—*Mr. Bureau*..*Not printed.*

61 (13*e*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Patrick Shea, postmaster at Tompkinsville, Guysborough County, N.S. Presented 7th May, 1913.—*Mr. Sinclair*.....*Not printed.*

61 (13*f*). Return to an Order of the House of the 29th January, 1913, for a copy of all complaints and charges made against Elias Rawding, postmaster at Clementsport, Annapolis County, N.S., and of all letters, petitions, telegrams, and other correspondence relating in any way to his dismissal and the appointment of a successor. Presented 7th May, 1913.—*Mr. Sinclair*.....*Not printed.*

61 (13*g*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Charles McLean, postmaster at Strathlorne, Inverness County, Nova Scotia Presented 7th May, 1913.—*Mr. Chisholm* (*Inverness*).. .. ..*Not printed.*

61 (13*h*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Angus R. McDonald, postmaster at Broad Cove Chapel, Inverness County, Nova Scotia. Presented 7th May, 1913.—*Mr. Chisholm* (*Inverness*).. ..*Not printed.*

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61 (13*i*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of John McPhail, postmaster at Scotsville, Inverness County, Nova Scotia. Presented 7th May, 1913.—*Mr. Chisholm (Inverness)*.....*Not printed.*

61 (13*j*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, telegrams, complaints, petitions or other documents of any kind received by the government, or any member or official thereof, relating to the conduct of J. Morgan, one time postmaster of the village of Ailsa Craig, Ontario, as such, and relating to an investigation into said conduct. Presented 7th May, 1913.—*Mr. Ross.*
Not printed

61 (13*k*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Roderick McLean, postmaster at Kenlock, Inverness County, Nova Scotia. Presented 8th May, 1913.—*Mr. Chisholm (Inverness)*.....*Not printed*

61 (13*l*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Allan Gillis, postmaster at Gillisdale, South West Margaree, Inverness County, Nova Scotia. Presented 8th May, 1913.—*Mr. Chisholm (Inverness).*
Not printed.

61 (13*m*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of David Shaw, postmaster at Marsh Brook, North East Margaree, Inverness County, Nova Scotia. Presented 8th May, 1913.—*Mr. Chisholm (Inverness).*
Not printed.

61 (13*n*). Return to an Order of the House of the 29th January, 1913, for a copy of all papers concerning the investigation and dismissal of Helen Joubert, postmistress at Sayabec, Quebec. Presented 8th May, 1913.—*Mr. Lemieux*.....*Not printed.*

61 (13*o*). Return to an Order of the House of the 29th January, 1913, for a copy of all correspondence, letters, and telegrams between the Honourable Postmaster General or the Post Office Department, and any person or persons, relative to the dismissal or the request therefor of D. A. Redmond, until recently postmaster at Brinston, Ontario. Presented 8th May, 1913.—*Mr. Graham*.....*Not printed.*

61 (13*p*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Dan. McEachern, postmaster at McEachern's Mills, Broad Cove Chapel, Inverness County, Nova Scotia. Presented 8th May, 1913.—*Mr. Chisholm (Inverness).*
Not printed.

61 (13*q*). Return to an Order of the House of the 3rd February, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of Daniel Dunlop, postmaster at New Campbellton, riding of North Cape Breton and Victoria, N.S., and of the evidence taken and reports of the investigation held by H. P. Duchemin, in regard to same, with a detailed statement of expense of such investigation. Presented 8th May, 1913.—*Mr. McKenzie*.....*Not printed.*

61 (13*r*). Return to an Order of the House of the 15th January, 1913, for a copy of all papers, letters, telegrams, evidence and other documents regarding the dismissal of Arthur Armstrong, postmaster at Greenfield, Carleton County, N.B. Presented 8th May, 1913.—*Mr. Carvell*.....*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (13*s*). Return to an Order of the House of the 3rd February, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relative to the dismissal of Alex. Matheson, postmaster at Boulardarie Centre, north riding Cape Breton and Victoria. Presented 8th May, 1913.—*Mr. McKenzie*.....*Not printed.*

61 (13*t*). Return to an Order of the House of the 15th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Arthur Talbot, late postmaster at Robertsville, County of Megantic, Province of Quebec. Presented 8th May, 1913.—*Mr. Pacaud*.....*Not printed.*

61 (13*u*). Dismissal of N. C. Lyster, late postmaster at Lloydminster, Sask.—(*Senate*). *Not printed.*

61 (13*v*). Return to an Order of the House of the 2nd April, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of Mrs. Maggie Cameron, postmistress at Achosnach, Inverness County, Nova Scotia. Presented 9th May, 1913.—*Mr. Chisholm (Inverness)*.. .. .. ..*Not printed.*

61 (13*w*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of David Fraser, postmaster at North East Margaree, Inverness County, Nova Scotia. Presented 9th May, 1913.—*Mr. Chisholm (Inverness)*.. .. .. ..*Not printed.*

61 (13*x*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal and retention of W. Stayley Porter, postmaster, Port Maitland, Yarmouth County, N.S., and of the evidence taken and report of investigation held by Charles Lane, in regard to the same; also a detailed statement of expenses of such investigation. Presented 9th May, 1913.—*Mr. Law*.....*Not printed*

61 (13*y*). Return to an Order of the House of the 29th January, 1913, for a copy of all charges, telegrams and other documents relating to the dismissal of Alex. McQueen, postmaster at Kowstoke, Inverness County, Nova Scotia, and of the evidence taken and report of investigation held by H. P. Duchemin, in regard to the same; also a detailed statement of the expenses of such investigation. Presented 9th May, 1913.—*Mr. Chisholm (Inverness)* .. ..*Not printed.*

61 (13*z*). Return to an Order of the House of the 3rd February, 1913, for a return showing the number of employees of the Department of Public Works who have been dismissed in the County of Berthier since the 21st September, 1911, giving the names of the said employees; if an inquiry was held in each case; on whose recommendation, in each case, these dismissals were made; the names of those appointed successors to these persons and on whose recommendation. Presented 12th May, 1913.—*Mr. Beland* *Not printed.*

61 (14*a*). Return to an Order of the House of the 10th February, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents in connection with the dismissal and retention of Jesse L. Morton, postmaster at Lower Argyle, N.S., and of the evidence taken and report of the investigation held by Mr. Lane, in regard to the same, also a detailed statement of the expenses of such investigation. Presented 20th May, 1913.—*Mr. Law*.....*Not printed*

61 (14*b*). Return to an Order of the House of the 10th February, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents in connection with the dismissal of Mrs. M. C. Gaudet, postmistress at West Pubnico, Yarmouth County, N.S., and of the evidence taken and report of the investigation held by Mr. Lane, in regard to same, and also a detailed statement of the expenses of such investigation Presented 20th May, 1913.—*Mr. Law*.....*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

61 (14*c*). Return to an Order of the House of the 28th April, 1913, for a copy of all charges, correspondence, telegrams, and other documents relative to the dismissal of John P. McKinnon, section foreman on the Intercolonial railway at Shubenacadie, in the riding of North Cape Breton and Victoria, N.S. Presented 20th May, 1913.—*Mr. McKenzie*.....*Not printed.*

61 (14*d*). Return to an Order of the House of the 15th January, 1913, for a copy of all papers, letters, telegrams, evidence and other documents regarding the dismissal of Mary A. Bohan, as postmistress at Bath, Carleton County, N.B. Presented 21st May, 1913.—*Mr. Carvell*.....*Not printed.*

61 (14*e*). Return to an Order of the House of the 15th January, 1913, for a copy of all papers, letters, telegrams, evidence and other documents regarding the dismissal of Elward Lafferty, postmaster at Benton, Carleton County, N.B. Presented 21st May, 1913.—*Mr. Carvell*.....*Not printed.*

61 (14*f*). Return to an Order of the House of the 15th January, 1913, for a copy of all papers, letters, telegrams, evidence and other documents regarding the dismissal of Dennis McGaffigan, postmaster at Florenceville, Carleton County, N.B. Presented 21st May, 1913.—*Mr. Carvell*.....*Not printed.*

61 (14*g*). Return to an Order of the House of the 27th January, 1913, for a copy of all correspondence and documents bearing upon any change made or asked for in the employees of the Department of Marine and Fisheries in the County of Bonaventure between 5th December, 1912, up to date. Presented 27th May, 1913.—*Mr. Marcil (Bonaventure)*.. .. ..*Not printed.*

61 (14*h*). Return to an Order of the House of the 15th January, 1913, for a copy of all charges, correspondence, letters, telegrams and other documents relating to the dismissal of J. A. McKenzie. postmaster at Ashfield, Inverness County, N.S. Presented 2nd June, 1913.—*Mr. Chisholm (Inverness)*.. .. ..*Not printed.*

61 (14*i*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, petitions, telegrams, complaints, reports and other papers and documents in the possession of the Post Office Department, or any department of the government, relating to the dismissal of James Bowles, postmaster at Alder River, N.S., and if there was an investigation, the names of all the witnesses examined, a copy of the evidence, and a detailed statement of the expense of such investigation. Presented 2nd June, 1913.—*Mr. Sinclair*.....*Not printed.*

61 (14*j*). Return to an Order of the House of the 21st April, 1913, for a copy of all correspondence, complaints, reports, recommendations, petitions, certificates and other documents relating to the dismissal of Mr. Edmund Lacroix, as postmaster of the Parish of St. Joseph du Lac, County of Two Mountains, and the appointment of Rodrique Larocque, of the same place as postmaster. Presented 2nd June, 1913.—*Mr. Ethier*.....*Not printed*

61 (14*k*). Return to an Order of the House of the 26th May, 1913, for a copy of all papers, letters, documents, reports and inquiry, relating to the lighthouse keeper of the Parish of Repentigny, County of L'Assomption. Presented 3rd June, 1913.—Mr. *Seguin*.....*Not printed.*

61 (14*l*). Return to an Order of the House of the 16th April, 1913, for a copy of all papers, documents, evidence, reports, &c., relating to the dismissal of B. C. Kanock, late shipping master at Lunenburg, N.S. Presented 4th June, 1913.—*Mr. McLean (Halifax)*. *Not printed.*

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61 (14*m*). Return to an Order of the House of the 3rd March, 1913, for a copy of all complaints, accusations, correspondence, petitions and telegrams, respecting the dismissal of Ulric Thibaudeau, agent for pilots at Quebec, and of all documents respecting the appointment of his successor, such as petitions, letters of recommendation, &c., and of the evidence and report made after the inquiry held by the inquiring commissioner; and also a detailed statement of the expenses caused by this inquiry. Presented 4th June, 1913.—*Mr. Delisle*.....*Not printed.*

61 (14*n*). Supplementary return to an Order of the House of the 20th January, 1913, for a return showing the names of all officials of the Marine and Fisheries Department who have been dismissed or removed in the County of Pictou, the reasons of the same, the evidence taken at any investigation held in regard to them, and the reports of said investigations, the names of their successors, and a copy of all letters, charges, complaints and recommendations from any person or persons in regard to the said removals or dismissals, or in regard to the appointment of their successors. Presented 4th June, 1913.—*Mr. Macdonald*.....*Not printed.*

61 (14*o*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, petitions, telegrams, complaints, evidence, reports and other papers and documents in the possession of the Post Office Department, or any department of the government relating to the dismissal of Captain Freeman Myers, postmaster at Cole Harbour, Guysborough County, N.S., and if there was an investigation, the names of all witnesses examined, a copy of the evidence, and a detailed statement of the expenses of such investigation. Presented 4th June, 1913.—*Mr. Sinclair.*

Not printed

61 (14*p*). Return to an Order of the House of the 4th December, 1912, for a return showing all public officers removed by the present government in the district of St. James, Montreal, together with the names and duties of such persons, the reasons of their dismissal, the nature of the complaints brought against them, and a copy of all correspondence relating thereto, and of reports of inquiries in the cases where such have been held. Presented 4th June, 1913.—*Mr. Lapointe (Montreal)*.....*Not printed*

61 (14*q*). Return to an Address to His Royal Highness the Governor General of the 4th December, 1912, for a return showing all the employees of the Dominion government in the constituency of Edmonton, dismissed between 10th of October, 1911, and 21st of November, 1912, the salary being paid to such employee at the time of his dismissal, together with a copy of all correspondence, recommendations to council, orders in council, and all other papers or documents in any way connected with such dismissals. Presented 4th June, 1913.—*Mr. Oliver*.....*Not printed.*

61 (14*r*). Return to an Order of the House of the 4th December, 1912, for a return showing the names of all officials in the district of Sunbury and Queens, who have been dismissed or removed from office since September, 1911, the reason for such dismissal or removal, the evidence taken at any investigation held in regard to them, the reports upon such investigations, the name of any successor appointed in place of dismissed officials, and a copy of all letters, charges, complaints and recommendations in regard to the said removals or dismissals, or in regard to the appointment of their successors. Presented 4th June, 1913.—*Mr. McLean (Sunbury)*.....*Not printed.*

61 (14*s*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, petitions, telegrams, complaints, evidence, reports and other papers and documents in the possession of the Department of Marine and Fisheries, or any department of the government relating to the dismissal of Levi Munroe, harbour master at

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White Head, N.S., and if there was an investigation, the names of all witnesses examined, a copy of the evidence, and a detailed statement of the expenses of such investigation. Presented 4th June, 1913.—*Mr. Sinclair*.....*Not printed.*

61 (14*t*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters petitions, telegrams, complaints, evidence, reports and other papers and documents in the possession of the Post Office Department, or any department of the government, relating to the dismissal of Stanford Langley, postmaster at Isaac Harbour North, N.S., and if there was an investigation the names of all witnesses examined, a copy of the evidence, and a detailed statement of the expenses of such investigation. Presented 5th June, 1913.—*Mr. Sinclair*.....*Not printed.*

61 (14*u*). Return to an Order of the House of the 24th February, 1913, for a copy of all letters, telegrams, correspondence, charges, evidence, reports, and other documents relating to the dismissal of Hugh R. McAdam as postmaster at Arisaig, N.S., and the appointment of Reverend Daniel L. Macdonald as his successor. Presented 5th June, 1913.—*Mr. Chisholm (Antigonish)*.....*Not printed.*

61 (14*v*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, petitions, telegrams, complaints, evidence, reports and other papers and documents in the possession of the Post Office Department, or any department of the government, relating to the proposed dismissal of J. J. McNeil, at Grant's Lake, N.S., and if there was an investigation, the names of the witnesses examined and a detailed statement of the expenses of such investigation. Presented 5th June, 1913.—*Mr. Sinclair*.....*Not printed.*

61 (14*w*). Return to an Order of the House of the 29th January, 1913, for a copy of all letters, petitions, telegrams, complaints, evidence, reports and other papers and documents in the possession of the Department of Railways and Canals, or any department of the government, relating to the dismissal of Alex. McInnis, car inspector of the Intercolonial railway at Mulgrave, N.S., and if there was an investigation, the names of all witnesses examined, a copy of the evidence, and a detailed statement of the expenses of such investigation. Presented 6th June, 1913.—*Mr. Sinclair*..*Not printed.*

61 (14*x*). Return to an Order of the House of the 28th April, 1913, for a copy of all charges, correspondence, telegrams, and other documents relative to the dismissal of Archibald McDonald, bridge tender on the Intercolonial railway at Grand Narrows, Iona, riding of North Cape Breton and Victoria, N.S. Presented 6th June, 1913.—*Mr. McKenzie*.....*Not printed.*

61 (14*y*). Names of all officials dismissed in Shelburne and Queens from 1st December, 1896. —(*Senate*).....*Not printed.*

62. Return to an Order of the House of the 4th December, 1912, for a return showing the number of all contracts cancelled in the County of Bonaventure since the 1st of October, 1911; the names of the contractors, the prices paid to them, the reasons for the cancellation in each case; and a copy of any investigations and reports had into the causes of such cancellations, the names of the new contractors and the prices paid to them in each case. Presented 14th January, 1913.—*Mr. Marcil (Bonaventure).* *Not printed.*

62*a*. Return to an Order of the House of the 5th December, 1912, for a return showing the number of rural mail delivery routes that have been established in Canada since the 1st January, 1912, in each province and county, respectively. Presented 14th January, 1913.—*Mr. Lemieux*.....*Not printed.*

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62*b*. Return to an Order of the House of the 9th December, 1912, for a copy of all correspondence, letters, telegrams, complaints and other documents relating to the cancelling of the contract for conveying His Majesty's mails, entered into on the 1st day of January, 1912, between the Honourable Postmaster General and Mr. J. C. Beeman, of Guthrie, County of Missisquoi; together with the reason for the cancellation of this contract, the price paid to Mr. Beeman, the name of the present contractor and the price paid to him. Presented by Hon. Mr. Pelletier.—*Mr. Kay*.....*Not printed.*

62*c*. Return to an Order of the House of the 11th March, 1912, for a copy of all letters, requests, memorandums, tenders and other documents in the possession of the Post Office Department relating to the calling for tenders and the granting of the contract now in force for the carrying of the mail between Sorel and Ste. Victoire, County of Richelieu. Presented 20th January, 1913.—*Mr. Cardin*.....*Not printed.*

62*d*. Return to an Order of the House of the 4th December, 1912, for a copy of all papers, letters, telegrams, tenders, bonds, agreements, contracts and other documents in the possession of the Post Office Department relating to the letting of the contract for carrying the mails between Heatherton and Guysborough, in the year 1912; and also relating to any temporary agreement entered into prior to the date of letting such contract. Presented 21st January, 1913.—*Mr. Sinclair*.....*Not printed*

62*e*. Return to an Order of the House of the 29th January, 1913, for a copy of all letters and other documents relating to the establishment of a rural mail service between Saltsprings and West River Station, in the County of Pictou, in the year 1912. Presented 17th February, 1913.—*Mr. Macdonald*.....*Not printed.*

62*f*. Return to an Order of the House of the 29th January, 1913, for a copy of all letters, and other documents relating to the establishment of a rural mail delivery service between Merigonish Station, County of Pictou, and Arisaig, in the County of Antigonish, in the year 1912. Presented 17th February, 1913.—*Mr. Macdonald.*
Not printed

62*g*. Return to an Order of the House of the 29th January, 1913, for a copy of all correspondence, letters, telegrams and reports regarding the termination of H. D. Decoste's contract for carrying the mails between Linwood Station and Linwood post office and the making of a new contract with D. Delorey, from the 1st January, 1913. Presented 28th February, 1913.—*Mr. Chisholm (Antigonish)*.....*Not printed.*

62*h*. Return to an Order of the House of the 4th December, 1912, for a copy of all correspondence, complaints, recommendations, telegrams and reports bearing on the railway mail service in Bonaventure County from October, 1911, up to date, and on the appointment and dismissal of officers in such connection, with the names, residences, salaries and duties, as well as of all documents bearing on the suspension of the railway mail service during the period mentioned, as well as a copy of all documents referring to agreements made to meet such a contingency during the coming winter. Presented 25th March, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

62*i*. Return to an Order of the House of the 9th December, 1912, for a copy of all tenders received and the contracts entered into for the carrying of the mails between St. Andrew and Beauley, County of Antigonish, and of all letters, telegrams and correspondence on file in the Post Office Department containing any recommendation or advice regarding the awarding of such contract, or in any way referring thereto. Presented 26th March, 1913.—*Mr. Chisholm (Antigonish)*.....*Not printed.*

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62*j*. Return to an Order of the House of the 3rd February, 1913, for a return showing what changes, if any, have been made in the contracts for the carrying of the mails in the County of Berthier, since the 21st September, 1911; in what parishes, on what date, and for what reason; to whom have the new contracts been granted, and if a tender was asked for in each case. Presented 14th April, 1913.—*Mr. Béland.*
Not printed

62*k*. Return to an Order of the House of the 29th January, 1913, for a copy of all letters, petitions, telegrams, bonds, reports and other papers and documents in the possession of the Post Office Department, or any department of the government, relating to the letting of the mail contract between Guysborough and Charlos Cove, County of Guysborough, N.S., during the year 1912. Presented 28th April, 1913.—*Mr. Sinclair.*
Not printed.

62*l*. Return to an Order of the House of the 14th April, 1913, showing the names of the various railway mail clerks employed, respectively, on the Montreal and Quebec divisions and the date of the appointment and residence of each. Presented 7th May, 1913.—*Mr. Bureau* .....*Not printed.*

62*m*. Return to an Order of the House of the 9th April, 1913, for a copy of the contract entered into by the Post Office Department with the Ontario Equipment Company of Ottawa relating to the purchase of locks for mail bags. Presented 7th May, 1913.—*Mr. Carrell* ....*Not printed.*

62*n*. Return to an Order of the House of the 7th April, 1913, for a copy of all correspondence, telegrams, &c., exchanged between the Honourable the Postmaster General and Dr. Faucher, of Quebec, concerning the purchase of a certain patented lock for mail bags. Presented 7th May, 1913.—*Mr. Lapointe (Kamouraska)*.. .. .. ..*Not printed.*

62*o*. Return to an Order of the House of the 7th April, 1913, for a copy of all correspondence, telegrams, &c., exchanged between the Honourable the Postmaster General and Mr. Aimé Dion, advocate of Quebec, concerning the purchase of a certain patented lock for mail bags. Presented 7th May, 1913.—*Mr. Verville*.....*Not printed.*

62*p*. Return to an Order of the House of the 29th January, 1913, for a copy of all letters, petitions, telegrams, complaints, reports, bonds of indemnity, and all other papers and documents in the possession of the Post Office Department, or any department of the government, relating to the contract for carrying the mails between Linwood or some point of the Intercolonial railway, County of Antigonish, N.S., and Grosvenor, County of Guysborough, N.S. Presented 9th May, 1913.—*Mr. Sinclair*....*Not printed.*

62*q*. Return to an Order of the House of the 24th April, 1913, for a return showing the full names of the mail carriers in the County of Vaudreuil and Soulanges; between what place they perform the service; the distance between each of these places; the amount of each carrier's contract, and the amount the government paid for the carriage of the mail in these different places before September, 1911. Presented 16th May, 1913.—*Mr. Boyer*.....*Not printed.*

62*r*. Return to an Order of the House of the 7th May, 1913, for a return showing the number of post offices in Yarmouth County, Nova Scotia, not served with daily mail, giving the names and the number of times per week served. Presented 20th May, 1913. —*Mr. Law*..... ..... *Not printed.*

62*s*. Return to an Address to His Excellency the Administrator of the 7th April, 1913, for a copy of all orders in council, reports of experts and contracts, in connection with

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the different purchases of rural mail delivery boxes made by the Post Office Department since 1908, until 1st January, 1912. Presented 21st May, 1913.—*Mr. Lemieux.* *Not printed.*

62*t*. Return to an Order of the House of the 12th May, 1913, for a return giving the names of the post offices and of the postmasters in the Counties of Soulanges and Vaudreuil. Presented 21st May, 1913.—*Mr. Boyer*.....*Not printed.*

62*u*. Return to an Order of the House of the 5th December, 1912, for a copy of all letters, telegrams, petitions and other documents relating to the establishment of rural mail delivery routes in the County of Pictou since the 1st October, 1911, with a statement of all routes applied for, of routes established and of those refused, and the reason for their refusal. Presented 2nd June, 1913.—*Mr. Macdonald*.....*Not printed.*

62*v*. Return to an Order of the House of the 31st March, 1913, for a copy of all correspondence concerning the purchase of new locks for mail bags by the Post Office Department from the Ontario Equipment Company. Presented 4th June, 1913.—*Mr. Carrell.* *Not printed.*

62*w*. Return to an Order of the House of the 17th February, 1913, for a copy of all correspondence, letters, telegrams, memoranda, tenders, bonds and all other documents relative to the contract for the carrying of the mail between the post office and Canadian Pacific Railway station at Three Rivers and vice versa, since the eleventh day of October, 1911, to date. Presented 4th June, 1913.—*Mr. Tobin*.....*Not printed.*

62*x*. Return to an Order of the House of the 21st April, 1913, for a copy of all correspondence, telegrams, complaints, affidavits, reports, recommendations, requests, certificates, contracts and other documents relating to the cancelled contract of M. E. Bougie, for carrying the mails between the post office and railway station at Bromptonville, Quebec. Presented 4th June, 1913.—*Mr. Bureau*.....*Not printed.*

63. Return to an Order of the House of the 4th December, 1912, for a return showing all the new post offices opened in the County of Bonaventure, since October, 1911, up to date, and a copy of the correspondence in connection therewith, together with the names of such post offices and postmasters, and the location of such offices; and also a copy of all papers asking for such offices. Presented 14th January, 1913.—*Mr. Mareil (Bonaventure)*.....*Not printed.*

64. Return to an Order of the House of the 9th December, 1912, for a copy of all petitions, correspondence, memoranda, recommendations and other papers or documents in the possession of the Department of Marine and Fisheries relating to the proposals to supply medicine or medical attendance free, or otherwise, to Canadian boat fishermen. Presented 14th January, 1913.—*Mr. Sinclair*.....*Not printed*

65. Return to an Order of the House of the 4th December, 1912, for a copy of all correspondence, petitions, complaints, memoranda, reports and investigations regarding the service performed by the steamer *Canada*, owned by the Inter-Provincial Navigation Company of Fraserville, Quebec, since October, 1911, up to date, and also of all documents bearing on the present contract with the Department of Trade and Commerce, or the renewal or extension thereof. Presented 14th January, 1913.—*Mr. Mareil (Bonaventure)*.....*Not printed*

66. Return to an Order of the House of the 9th December, 1912, for a copy of all papers, documents, telegrams, letters, &c., relating to the matter of the establishment of a lobster hatchery at Spry Bay, Halifax County, N.S. Presented 14th January, 1913. —*Mr. Maclean (Halifax)*.....*Not printed.*

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67. Return to an Order of the House of the 9th December, 1912, for a copy of all papers, documents, telegrams, &c., between the Department of Trade and Commerce and any company, person or persons, relative to the continuance and payment of a subsidy towards a steamship service between St. John, N.B., and Bear River, N.S., for the fiscal year 1912, and performed during the fiscal year 1911. Presented 17th January 1913.—*Mr. Maclean (Halifax)*.....*Not printed.*

67*a*. Return to an Order of the House of the 4th December, 1912, for a copy of all papers, documents, memoranda, letters, telegrams and documents bearing on a request for a subsidy for a steam service between Bonaventure, Quebec, or any other part of Bonaventure County and Bathurst, New Brunswick, or any other part of Gloucester County, New Brunswick, and between New Richmond, Quebec, and Dalhousie, New Brunswick, and between Carleton and Miguasha, Quebec, and Dalhousie, New Brunswick, or Campbellton, New Brunswick, or both, as well as a copy of all replies made for such subsidies and this since October, 1911, to date. Presented 14th January, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

67*b*. Return to an Address to His Royal Highness the Governor General of the 9th December, 1912, for a copy of all advertisements, tenders, contracts, orders in council memoranda, papers, letters and correspondence in any way relating to a subsidized steamship service between Canadian ports and any ports of the British West Indies, or any proposed improvement or extension of such steamship service since 1st November, 1911 to the present time. Presented 15th January, 1913.....*Not printed.*

67*c*. Return to an Order of the House of the 4th December, 1912, for a copy of all reports made by officials of the Department of Railways and Canals on the Quebec and Oriental railway, and the Atlantic, Quebec and Western railways, together with a statement of the subsidies paid such railways since October, 1911, up to date, and a copy of all correspondence in that connection. Presented 17th January, 1913.—*Mr Marcil (Bonaventure)*.....*Not printed*

67*d*. Return to an Order of the House of the 4th December, 1912, for a copy of all correspondence between the Minister of Railways or any other member of the government and any person regarding the acquisition by the government of Canada of the Quebec Oriental railway, formerly the Atlantic and Lake Superior railway, and the Atlantic, Quebec and Western railway, or both. Presented 27th January, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

67*e*. Return to an Order of the House of the 29th January, 1913, for a copy of the report made to the Minister of Railways and Canals by the party of government engineers who inspected the Quebec and Saguenay railway during December, 1912, January, 1913. Presented 27th February, 1913.—*Mr. Lemieux*.....*Not printed.*

67*f*. Return to an Order of the House of the 17th February, 1913, for a copy of all reports made by any engineers or accountants to the Minister of Railways and Canals on the usefulness of the Atlantic, Quebec and Western railway and the Quebec Oriental railway, to the Intercolonial railway as branch lines or feeders. Presented 27th February, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

67*g*. Return to an Address to His Royal Highness the Governor General of the 9th December, 1912, for a copy of all papers, documents, petitions, orders in Council, memoranda, correspondence, &c., by and between the government of Canada or any member thereof, and the government of the province of British Columbia, or any member thereof, since 1st May, 1912, relating to the subject to an increase of the provincial subsidy to the said province. Presented 16th April, 1913.—*Mr. Maclean (Halifax).*

Printed for sessional papers.

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67*h*. Return to an Address to His Royal Highness the Governor General of the 20th January, 1913, for a copy of all documents and memorials of the government of British Columbia presenting claims for additional provincial subsidies, and of all correspondence and orders in council on the same. Presented 16th April, 1913.—*Sir Wilfrid Laurier*.....*Printed for sessional papers.*

67*i*. Copy of agreement made with the several provinces as to the expenditure of the subsidies granted under the Agricultural Aid Act, and statement showing the purposes for which said subsidies are to be expended. Presented 6th June, 1913, by Hon. Mr Burrell.....*Not printed.*

68. Copies of general orders promulgated to the militia for the period between 2nd November, 1911, and 5th November, 1911. Presented by Hon. Mr. Hughes, 14th January, 1913. *Not printed.*

69. Return to an Address to His Excellency the Right Honourable Sir Charles Fitzpatrick, P.C., &c., administrator, of the 31st March, 1913, for a copy of all papers, documents, petitions, letters, telegrams, orders in council and other papers and documents in possession of the Department of Customs, relating to the duty payable on twine used for fishing purposes, and especially relating to the construction placed upon item 682 of the Customs Tariff. Presented 23rd May, 1913.—*Mr. Sinclair*.....*Not printed.*

70. Return to an Order of the House of the 30th November, 1912, for a return showing:—

1. The date when the present Canadian Pure Food Act, now known as the Adulteration Act, R.S.C., was enacted.

2. What foods, beverages or drugs have standards of strength and purity under the Act been fixed, and what are the dates when such standards become operative.

3. What foods, beverages or drugs have standards of strength and purity been prepared and recommended from time to time by the chief analyst, which have not been put in force, and why were such standards not put in force.

4. How many cases of adulteration together with cases which show standards of quality below those required by the Adulteration Act, have been ascertained by the Dominion analyst since the said Act came into operation.

5. In how many of such cases did prosecutions under the Act or under the Criminal Code follow, and in how many cases were convictions secured. Presented 14th January, 1913.—*Mr. McDonnell*.....*Not printed.*

71. Return to an Order of the House of the 4th December, 1912, for a copy of all correspondence, negotiations, proposals in writing and other papers and documents in the possession of the government, or any department thereof, relating to reciprocity in trade with the United States, bearing date between the 1st day of January, 1890, and the 31st day of December, 1892. Presented 14th January, 1913.—*Mr. Sinclair.* *Not printed*

72. Return to an Order of the House of the 4th December, 1912, for a copy of all letters, telegrams, &c., exchanged between the member for Bellechasse County and the Minister of Agriculture and the Postmaster General, concerning the appointment of an additional physician at the quarantine station of Grosse Ile. Presented 14th January, 1913.—*Mr. Lemieux*.....*Not printed.*

72*a*. Return to an Order of the House of the 10th December, 1912, for a copy of all correspondence, documents, recommendations and reports concerning the appointment of Doctor Pomminville, to the position of surgeon of the St. Vincent de Paul penitentiary, replacing Doctor A. Allaire. Presented 24th January, 1913.—*Mr. Wilson (Laval)*.....*Not printed.*

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72*b*. Return to an Order of the House of the 10th December, 1912, for a copy of all letters, telegrams, correspondence and other documents relating to the appointment of Charles W. Hatfield, fishery officer on the Tusket River, Yarmouth County, N.S. Presented 27th January, 1913.—*Mr. Law*.....*Not printed.*

72*c*. Return to an Order of the House of the 10th December, 1912, for a copy of all correspondence, letters, requests, telegrams and other documents relating to the appointment of Louis Nadeau as postmaster at Ste. Christine, County of Bagot. Presented 4th February, 1913.—*Mr. Marcil*.....*Not printed*

72*d*. Return to an Order of the House of the 29th January, 1913, for a copy of all orders letters, telegrams and other documents in connection with the appointment of Lt.-Col. Warburton, as administrative medical officer at the Charlottetown camp in 1912, and of all letters and telegrams asking for a change in the said appointment, and of all orders and other documents relating to his being superseded, and to the appointment of his junior, Lt.-Col. Jenkins, in his place. Presented 13th February, 1913.—*Mr. Macdonald*.....*Not printed.*

72*e*. Return to an Order of the House of the 27th January, 1913, for a copy of all documents, letters, correspondence, recommendations, reports, &c., relating to the appointment of Mr. J. Begin as manager of the experimental farm at Ste. Anne de la Pocatière. Presented 13th February, 1913.—*Mr. Lapointe* (*Kamouraska*)....*Not printed.*

72*f*. Return to an Order of the House of the 29th January, 1913, for a copy of all correspondence exchanged between Dr. Marcotte, M. Lavallée, M.P., the Honourable the Postmaster General and the Minister of Agriculture, concerning the appointment of an additional medical officer at Grosse Isle quarantine station. Presented 19th February, 1913.—*Mr. Lemieux*.....*Not printed.*

72*g*. Return to an Order of the House of the 3rd March, 1913, for a copy of all letters, telegrams, recommendations and other papers in connection with the appointment of John Macdonald as Inspector of Inland Revenue for the Maritime Provinces, and of all letters, telegrams, applications, recommendations and other papers received from any other person or persons relative to the applications of other persons for the position. Presented 17th March, 1913.—*Mr. Macdonald*.....*Not printed.*

72*h*. Return to an Order of the House of the 17th February, 1913, for a copy of all letters, petitions, telegrams, recommendations and other papers and documents, in the possession of the Department of Marine and Fisheries, or any department of the government, relating to the appointment of F. W. Kelley, M.D., as port physician at Bridgewater, N.S. Presented 18th March, 1913.—*Mr. Law*.....*Not printed*

72*i*. Return to an Address to His Royal Highness the Governor General of the 4th December, 1912, for a return showing all appointments to office under the Dominion government in the constituency of Edmonton from 10th October, 1911, to 21st November, 1912, with a statement of the salaries in each case, together with a copy of all correspondence, recommendation to council, orders in council, and all other papers or documents in any way connected with such appointments. Presented 28th March, 1913.—*Mr. Oliver* .....*Not printed.*

72*j*. Return to an Order of the House of the 4th December, 1912, for a copy of all correspondence, recommendations, reports, memoranda and other documents bearing on the appointment of a general foreman, or other permanent or temporary officials, of the Department of Public Works in the County of Bonaventure since October, 1911, up to date, with the names, residences, duties and salaries of such appointees. Presented 2nd May, 1913.—*Mr. Marcil* (*Bonaventure*).....*Not printed.*

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72*k*. Appointment of Mr. McCloskie as postmaster at Waukau, British Columbia.—(*Senate*) *Not printed.*

73. Return to an Address to His Royal Highness the Governor General of the 9th December, 1912, for a return showing all changes made in the Customs Tariff of Canada by order in council since the close of last session of parliament. Presented 14th January, 1913.....*Not printed.*

74. Return to an Order of the House of the 9th December, 1912, for a return showing the quantity and value of molasses of cane, as defined in tariff item No. 137a, imported into Canada for the fiscal year ending 31st March, 1912, from each island of the British West Indies, which are parties to the Canada-West India Trade Agreement. Presented 14th January, 1913.—*Mr. Maclean (Halifax)*.....*Not printed.*

75. Letter of the Honourable F. D. Monk, M.P., to the Right Honourable the Prime Minister, resigning his position as Minister of Public Works, and the letter of the Prime Minister in acknowledgment thereof. Presented by Hon. Mr. Borden, 14th January, 1913.....*Not printed.*

75*a*. Return to an Order of the House of the 26th May, 1913, for a copy of all letters, reports, documents and all other communications relating to the appointment of Colonel Crowe as Commandant of the Royal Military College and to his resignation of said position, or to the extension of his term of service or to the termination thereof, and of all papers or letters passing between the minister and Colonel Crowe, relative to his resignation or the failure to extend his term of service. Presented 3rd June, 1913.—*Mr. Macdonald*.....*Not printed*

75*b*. Return to an Order of the House of the 26th May, 1913, for a copy of all letters, reports, complaints and other communications and documents which passed between General McKenzie and the Minister of Militia or his department, previous to, and which led up to the resignation of General McKenzie; and also a copy of said resignation, and the reply of the minister thereto, and of any and all communications had with the War Office thereto, and of all other papers and documents in connection therewith. Presented 4th June, 1913.—*Mr. Macdonald*.....*Not printed.*

76. Return to an Order of the House of the 4th December, 1912, for a copy of all papers, letters, telegrams, complaints and reports, bearing on the delay in the payment of census enumerators in the County of Bonaventure, in connection with the last census, together with the names, residences, amounts, and dates of payment. Presented 15th January, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

77. Report of departmental commission on the official statistics of Canada. Presented 15th January, 1913 .....*Printed for distribution only.*

78. Return to an Order of the House of the 18th March, 1912, for a copy of all correspondence in the possession of the Postmaster General respecting the change of name of Broderick post office in the Province of Saskatchewan, to St. Aldwyn. Presented 15th January, 1913.....*Not printed.*

78*a*. Return to an Order of the House of the 30th November, 1911, for a copy of all papers, telegrams, letters, &c., between the Postmaster General and any other person respecting the closing or removal of the present post office at Spry Bay, Halifax County. Presented 20th January, 1913.—*Mr. Maclean (Halifax)*.....*Not printed.*

79. Report of the commissioner Dominion Police Force, for the year 1912. Presented by Hon. Mr. Foster, 15th January, 1913.....*Not printed.*

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80. Return to an Order of the House of the 9th December, 1912, for a copy of all correspondence, complaints, reports and all documents relating to the cancelling of lease No. 18778, consented to by the Honourable Minister of Railways and Canals, to Aurile Lebœuf, on the 12th December, 1910.—Presented 16th January, 1913.—*Mr. Papineau.*
Not printed

81. Return to an Address to His Royal Highness the Governor General of the 4th December, 1912, for a copy of all orders in council passed since 1st October, A.D. 1911, relating to the Board of Management of the Government Railways of Canada, or of any other member thereof, or in any way affecting the same, or any official of the Intercolonial Railway, as regards the duties to be performed or the powers to be exercised by the said Board or any member thereof, or by any such official, together with a copy of all recommendations, letters, applications, instructions, or other correspondence, in any manner relating thereto or having regard to the said orders in council as to the management of the Intercolonial railway. Presented 17th January, 1913.—*Mr. Emmerson*.....*Not printed*

81*a*. Return to an Address to His Royal Highness the Governor General of the 4th December, 1912, for a copy of a certain Order in Council issued during the current year by which certain official reports formerly made to Board of Management of the Intercolonial Railway have been ordered in future to be made to Mr. F. P. Brady. Presented 17th January, 1913.—*Mr. Sinclair*.....*Not printed.*

82. Return to an Order of the House of the 5th December, 1912, for a copy of all papers, including surveys, tenders, and every other record, or document in the possession of the Department of Railways and Canals or any other department of the government relating to the building of a line of railway from Estmere, County of Victoria, Province of Nova Scotia, to the town of Baddeck in the same county. Presented 17th January, 1913.—*Mr. McKenzie*.....*Not printed.*

83. Return to an Address to His Royal Highness the Governor General of the 9th December, 1912, for a copy of all documents, papers, tenders, contracts, orders in council and correspondence in connection with the supply of castings for and the purchase of scrap iron from the eastern division of the Intercolonial Railway since 1st May, 1912. Presented 17th January, 1913.—*Mr. Maclean (Halifax)*.....*Not printed.*

83*a*. Return to an Order of the House of the 9th December, 1912, for a return showing the names of the employees on the dining cars of the Intercolonial Railway and the nature of their employment; and also of the employees on the Pullman cars of the Intercolonial Railway and the nature of their employment. Presented 17th January, 1913. —*Mr. Boulay*.....*Not printed.*

83*b*. Return to an Order of the House of the 9th December, 1912, for a copy of all papers documents, telegrams, letters, &c., relating to a strike of temporary employees of the Intercolonial Railway at Halifax, in August, 1912. Presented 27th January, 1913.—*Mr. Melean (Halifax)*.....*Not printed.*

83*c*. Return to an Order of the House of the 10th December, 1912, for a copy of all evidence plans, reports, correspondence, &c., respecting an inquiry held concerning an accident on the Intercolonial Railway at St. André de Kamouraska on 7th October, 1912, caused by train No. 33, the maritime express going west. Presented 27th January, 1913.—*Mr. Lapointe (Kamouraska)*.....*Not printed.*

83*d*. Return to an Order of the House, of the 29th January, 1913, for a copy of the evidence taken at the inquiry held in the month of November, 1912, by Mr. MacDonald

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superintendent of the Intercolonial at Lévis, in reference to Alfred Laugnay, an employee of the Intercolonial at St. Charles, County of Bellechasse. Presented 27th February, 1913.—*Mr. Lapointe (Kamouraska)*.....*Not printed.*

83*e*. Return to an Order of the House of the 19th February, 1913, for a copy of all telegrams, letters, petitions, reports of engineers, plans, surveys, and other documents in the possession of the Department of Railways and Canals, and having been received since 1st January, 1912, relating to the construction of a branch line of the Intercolonial Railway into Guysborough County. Presented 18th March, 1913.—*Mr. Sinclair*.....*Not printed.*

83*f*. Return to an Order of the House of the 24th February, 1913, for a copy of all petitions, resolutions, letters, telegrams and correspondence, relating to free or reduced transportation of hay over the Intercolonial Railway for the farmers of Antigonish County, Nova Scotia, and also of the evidence taken and report made as to the shortage of hay in that and other of the eastern counties of Nova Scotia. Presented 18th March, 1913.—*Mr. Chisholm (Antigonish)*.....*Not printed.*

83*g*. Return to an Order of the House of the 29th January, 1913, for a copy of all letters telegrams, tenders, acceptances of tenders, cancellation of tenders and other papers and documents in the possession of the Department of Railways and Canals, or any department of the government, bearing date after 1st July, 1912, relating to the supply of ice for the use of the Intercolonial Railway at Mulgrave, N.S. Presented 18th March, 1913.—*Mr. Sinclair*.....*Not printed.*

83*h*. Return to an Order of the House of the 12th February, 1913, for a copy of all letters correspondence, petitions and other documents, on file in the Department of Railways and Canals, or in the office of the Intercolonial Railway at Moncton, relating or in any way appertaining to the new public wharf at Sackville, N.B., and the necessity of establishing in the interest of the traffic of the Intercolonial Railway, and of the shipping and trade facilities of Sackville, and of the commerce of communities adjacent thereto, rail connections between the said wharf and the main line of the said railways at Sackville station; also of all letters and other communications received by the chairman or vice-chairman of the Government Railways Managing Board, or by any official of the said railway, relating in any manner to the said subject, received by them or any of them during the years 1911, 1912 and 1913. Presented 19th March, 1913.—*Mr. Emmerson*.....*Not printed*

83*i*. Return to Order of the House of the 19th March, 1913, for a return showing who the tenderers were, and the amount of each tender for the supply of castings for the Intercolonial Railway during the present year. Presented 28th March, 1913.—*Mr. Macdonald*.....*Not printed.*

83*j*. Return to an Order of the House of the 19th March, 1913, for a return showing how many kegs of nails were purchased in 1912 for the Intercolonial Railway; the prices paid therefor in each case; whether tenders were invited in the case of each purchase and, if so, who the respective tenderers were and the prices submitted; to whom were the contracts awarded in each case. Presented 28th March, 1913.—*Mr. Murphy.*
Not printed.

83*k*. Return to an Order of the House of the 19th March, 1913, for a return showing the amounts received by the Intercolonial Railway for freight and passengers respectively for each of the twelve months of the calendar years 1910, 1911 and 1912, at the following stations:—Montreal, Halifax, St. John, Sydney, Truro, Moncton, New Glasgow

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and Amherst; also, the total receipts of the said railway for freight and passengers respectively during each of the said years. Presented 28th March, 1913.—*Mr. Rhodes.* *Not printed.*

83*l*. Return to an Order of the House of the 20th January, 1913, for a copy of all letters correspondence, telegrams, representations, requests and reports on file in the Department of Railways and Canals, or in the offices of the Intercolonial Railway at Moncton, or among the records of the Government Railways Managing Board, or in the office of the assistant chairman of the Government Railways Managing Board, relating to or in any way connected with the water supply system at Dorchester station on the Intercolonial railway, or relating to the absence of and the total failure to provide a supply of water for drinking or other purposes at that station, or in connection with the dwelling of the station agent in the Station House; and also of all correspondence, letters, requests, recommendations and reports relating to the alleged necessity of additional clerical or other help or assistance at the station. Presented 21st April, 1913.—*Mr. Emmerson*..... .....*Not printed.*

83*m*. Return to an Order of the House of the 12th February, 1913, for a copy of all correspondence, letters, telegrams, reports and other papers on file in the Department of Railways and Canals, or in the offices of the Intercolonial Railway at Moncton, relating to M. L. Tracy, an employee of the mechanical department of the Intercolonial during the years 1899 and 1900, and of all letters and correspondence relating to the case of the said M. L. Tracy, passing between the then Minister of Railways and Canals and any of the officials of the railway, during those years; also a copy of the letters of D. Pottinger, then general manager, the late James E. Price, then general superintendent, and the late M. Jarvis, then a divisional superintendent of said railway, relating to the same subject during the said period of 1899 and 1900. Presented 21st April, 1913.—*Mr. Emmerson*.....*Not printed.*

83*n*. Return to an Order of the House of the 3rd March, 1913, for a statement of all amounts collected by the Intercolonial Railway for freight on hay carried from Amherst and other stations on the Intercolonial, County of Cumberland, to Antigonish, N.S., and consigned to C. Edgar Whidden or C. B. Whidden & Son, in the month of January last and February instant, and by whom such freight was paid; also a copy of all way bills and bills of lading for the same. Presented 21st April, 1913. —*Mr. Chisholm* (*Antigonish*).....*Not printed.*

83*o*. Return to an Order of the House of the 3rd February, 1913, for a copy of all letters petitions, telegrams, complaints, communications, reports and other papers and documents, received since the 1st day of October, 1911, by and now in the possession of the Department of Railways and Canals, the Government Railway Managing Board or any official of the Intercolonial Railway or of the Prince Edward Island railway, relating to or in any manner appertaining to an application for, or a proposed reduction of the working hours for the Intercolonial railway employees at Moncton, or at any other point of the Intercolonial railway or the Prince Edward Island railway. Presented 21st April, 1913.—*Mr. Emmerson*.....*Not printed.*

83*p*. Return to an Order of the House of the 24th February, 1913, for a copy of all complaints, requirements, requisitions, petitions, and correspondence of all kinds made by the Sydney, N.S., Board of Trade, or by the citizens of the city of Sydney, or any of them, having reference to better and increased facilities on the Intercolonial Railway on the Sydney division. Presented 21st April, 1913.—*Mr. Carroll.* *Not printed.*

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83*q*. Return to an Order of the House of the 31st March, 1913, for a copy of all letters, papers and other documents relating to the claim for damages for the death of the young son of Thomas Hoare, who was killed at a crossing of the Intercolonial Railway in the town of Stellarton in the summer of 1912, and of all petitions, letters, and other papers asking for the placing of gates or other protection at said crossing. Presented 1st April, 1913.—*Mr. Macdonald*.....*Not printed.*

83*r*. Return to an Order of the House of the 14th April, 1913, for a copy of all correspondence exchanged between the Department of Railways and Canals at Moncton and the same department at Campbellton, on the subject of the collision which occurred at St. Moise, during the month of February, 1913, between the trains of E. Smith and the regular train No. 99, omitting from it the inquiry held in the matter. Presented 29th April, 1913.—*Mr. Boulay*.....*Not printed.*

83*s*. Return to an Order of the House of the 7th April, 1913, for a return showing the names, residences and occupations of all the employees of the Intercolonial Railway who have been dismissed in the County of Rimouski since the 21st September, 1911. Presented 29th April, 1913.—*Mr. Lapointe (Kamouraska)*.....*Not printed.*

83*t*. Certified copy of a report of the Privy Council of the 5th May, 1913, covering the appointment of Frederick Passmore Gutelius, as general manager of Government Railways. Presented by Hon. Mr. Cochrane, 7th May, 1913... .. .. ..*Not printed.*

83*u*. Return to an Order of the House of the 31st March, 1913, for a copy of all letters, memorials, petitions, correspondence, reports and other documents in the Department of the Postmaster General, or on file therein, relating or in any wise appertaining to the inauguration or establishing of railway mail facilities between Moncton, N.B., westward over the Intercolonial Railway towards St. John, in the morning, so as to furnish, among other things, opportunities for the transmission of newspapers and other mail matter, along said railway, to make morning connection with the railway mail facilities afforded by the railway from Salisbury, Westmorland County, N.B., running into Albert County, N.B.; and also relating to the establishment of railway mail facilities on each week day evening between Moncton eastward over the said railway by train known as number 84, running between Moncton, N.B., and Springhill Junction, Nova Scotia, thus affording the direct mail connection for newspapers and other mail matter each evening from Moncton to Shediac, Memramcook, Dorchester, Sackville, Amherst, and intermediate points east of Moncton; together with a statement showing what, if any, such railway mail facilities, either by locked bag or otherwise, were established or furnished over either of the said routes, and stating the respective dates when the same were so established or furnished generally, or in relation to any one of the newspapers published in Moncton, either in the morning or in the evening. Presented 12th May, 1913.—*Mr. Emmerson*.....*Not printed.*

83*v*. Return showing whether any contract has been made for the construction or supply of cars of any kind to the Intercolonial Railway since 1st January, 1913, and if so, to whom the contract was awarded; the number of cars, kind or class, and the price to be paid; whether any tenders were called for previous to awarding said contract, and if so, who the tenderers were, the amount of the tender in each case, and if tenders were calld for by private request or public advertisement. Presented 21st May, 1913. —*Mr. Macdonald*.....*Not printed.*

83*w*. Return to an Order of the House of the 28th April, 1913, for a return showing all amounts collected by the Intercolonial Railway for freight on hay shipped from Amherst and other stations on the Intercolonial, in the County of Cumberland, to Antigonish and other stations in the County of Antigonish, during the months of

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January, February and March last; the name of the consigners and of the consignees, the amount of freight paid on each shipment and by whom paid; also a copy of all way-bills and bills of lading for same. Presented 6th June, 1913.—*Mr. Chisholm (Antigonish)*.....*Not printed.*

84. Return to an Address to His Royal Highness the Governor General of the 9th December, 1912, for a copy of all papers, documents, memoranda, orders in council, letters and correspondence, relating in any way to the closing of the Canadian Immigration Office at Boston, U.S.A., in 1911, and its subsequent re-establishment. Presented 17th January, 1913.—*Mr. McLean (Halifax)*.....*Not printed*

85. Copies of despatches dated 11th December, 1912, which have been addressed to the Governors General of the Commonwealth of Australia and the Union of South Africa and the Governors of New Zealand and Newfoundland, on the subject of representation of the self-governing Dominions on the Committee of Imperial Defence. Presented by Hon. Mr. Borden, 17th January, 1913.....*Not printed.*

86. Reports in connection with the Tides and Currents of Northumberland Strait.—(*Senate*).....*Not printed.*

87. Archives Branch, *re* transferring of from Department of Agriculture to Secretary of State.—(*Senate*).....*Not printed.*

88. Commission appointed to investigate Indian reserves of British Columbia.—(*Senate*). *Not printed.*

89. Insurance rates between Canadian Atlantic ports, and ports in the United Kingdom.—(*Senate*) .....*Printed for distribution and sessional papers.*

90. Report of departmental commission relating to official statistics of Canada.—(*Senate*). *Printe d for distribution only.*

91. Copy of the Sixth Joint Report of the Commissioners for the Demarcation of the Meridian of the 141st degree of west longitude. Presented by Hon. Mr. Roche, 21st January, 1913.....*Not printed.*

92. Return to an Order of the House of the 9th December, 1912, for a copy of all papers, documents, petitions, memoranda, correspondence, &c., with the Government of British Columbia or any member thereof, with the fishery officers of the Marine and Fisheries Department resident in said province, with salmon canneries in said province, and with any company, person or persons, relating to the prohibition of the export of sockeye salmon from the said province of British Columbia since 15th October, 1911. Presented 20th January, 1913.—*Mr. Maclean (Halifax)*....*Not printed.*

93. Return to an Order of the House of the 20th March, 1912, for a copy of all correspondence and memoranda on the subject of cable rates, exchanged between the Canadian Post Office Department and the British Post Office Department. Presented 20th January, 1913.—*Mr. Lemieux*.....*Not printed.*

94. Return to an Address to His Royal Highness the Governor General of the 9th December, 1912, for a copy of all papers, documents, letters, &c., between the Government of Canada and the Commonwealth of Australia for the past twelve months relative to the matter of preferential tariff arrangements between the said two countries. Presented 21st January, 1913.—*Mr. Maclean (Halifax)*..*Printed for sessional papers only.*

95. Report of Mr. Olivar Asselin on an investigation of Belgian and French emigration to Canada. Presented by Hon. Mr. Roche, 21st January, 1913.
Printed for distribution and sessional papers.

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95*a*. Return to an Order of the House of the 4th December, 1912, for a copy of all complaints, letters, papers, reports, and of all documents bearing on the investigation held at Port Daniel West, Quebec, into the conduct of Edward Dea, as overseer or guardian of the lobster hatchery at that place. Presented 22nd January, 1913.—*Mr. Marcil* .....*Not printed.*

95*b*. Report of R. A. Pringle, Esq., K.C., in relation to the investigation of the wreck of the steamer *Mayflower*, on the 12th November, 1912. Presented by Hon. Mr. Hazen, 6th February, 1913.....*Not printed.*

95*c*. Return to an Address to His Royal Highness the Governor General of the 29th January, 1913, for a copy of the report of the commission appointed to investigate complaints against the United Shoe Machinery Company, together with the order in council appointing the commission, the complaints upon which the order was issued and all action, if any, taken by the government on report of commission, by order in council or otherwise. Presented 11th February, 1913.—*Sir Wilfrid Laurier.*
Not printed

95*d*. Return to an Order of the House of the 20th January, 1913, for a copy of all evidence, letters, telegrams and other documents in connection with the investigation into the stranding of the D. G. steamer *Earl Grey* at Toney River, County of Pictou, in the spring of 1912; of the reports of the commissioner investigating the same, and of all correspondence, telegrams and documents in connection therewith, and of any departmental action in connection therewith. Presented 18th March, 1913.—*Mr. Macdonald.*
Not printed

95*e*. Return to an Order of the House of the 27th January, 1913, for a copy of all letters, papers, evidence and other documents in connection with the investigation into the collision between the steamship *City of Sydney* and the tug boat *Douglas H. Thomas*, in Sydney Harbour, 13th November, 1912, and of the findings and reports of the commissioner holding the investigation in regard to the same. Presented 2nd April, 1913.—*Mr. Macdonald*.....*Not printed.*

96. Report of the Second International Moral Education Congress held at the Hague, 22nd to 27th of August, 1912, and as related thereto, on moral instruction in the Canadian public schools, &c., by Mr. J. A. M. Aikins, who was appointed by the government to represent Canada at that Congress. Presented by Hon. Mr. Borden, 21st January, 1913.....*Printed for distribution only.*

97. Return to an Order of the House of the 4th December, 1912, for a copy of all pay-lists, letters, documents, letters and other papers in connection with the expenditures at Cariboo Island in the County of Pictou. Presented 21st January, 1913.—*Mr Macdonald* .....*Not printed.*

98. Return to an Order of the House of the 22nd January, 1913, for a copy of all correspondence, letters and telegrams between the Minister of Marine and Fisheries, or any officer of his department, and J. A. Gillies, K.C., Sydney, relating to the purchase from John B. Nicholson, of a site for a salmon hatchery at Snidlope Lake, Richmond County, N.S., and also of all accounts, charges and vouchers received from the said J. A. Gillies, for services in connection therewith and the payments made to the said J. A. Gillies in respect of the same. Presented 7th February, 1913.—*Mr. Kyte.*
Not printed.

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99. Return to an Order of the House of the 9th December, 1912, for a copy of all papers, documents and correspondence, between the Department of Public Works and any person or persons relating to the placing of obstructions in the waters of South West Cove, Lunenburg County, N.S. Presented 24th January, 1913.—*Mr. Maclean (Halifax)*.....*Not printed.*

100. Return to an Order of the House of the 4th December, 1912, for a copy of all pay-lists, letters, documents, telegrams and other papers in connection with the expenditures at Skinner's Cove in the County of Pictou. Presented 24th January, 1913.—*Mr. Macdonald* .....*Not printed.*

101. Return to an Address to His Royal Highness the Governor General of the 22nd January, 1912, for a copy of all correspondence between the government of Canada and the government of the Province of Ontario, with regard to the extension of the boundaries of the said province. Presented 28th January, 1913.—*Sir Wilfrid Laurier.* *Not printed.*

102. Return to an Order of the House of the 4th December, 1912, for a copy of all correspondence, reports, and documents, bearing on the claim of C. R. Scoles, of New Carlisle, Quebec, to a balance of subsidy voted to the Atlantic and Lake Superior railway, since October, 1911, to date. Presented 24th January, 1913.—*Mr. Marcil.* *Not printed.*

103. Return to an Order of the House of the 4th December, 1912, for a copy of all correspondence, letters, telegrams, reports and other documents concerning an alleged defalcation in the accounts of Joseph J. Melanson, clerk in the customs office at Bathurst, County of Gloucester, which caused an inquiry to be held on the 23rd of October last by the Provincial Inspector of Customs, with the name of the accuser. Presented 24th January, 1913.—*Mr. Turgeon*.....*Not printed.*

104. Return to an Order of the House of the 9th December, 1912, for a copy of all papers, letters and telegrams in the custody of the Department of Railways and Canals, or any other department of the government, between the 1st day of September, 1874, and the 1st day of September, 1879, relating to the acquisition or expropriation of lands at St. Peters, N.S., for canal purposes, and relating to the appointment of valuators to apprise the value of such lands; the instructions to such valuators, the report or reports of such valuators, the area of lands taken, and the price paid for same; and also the amount paid each valuator for his services. Presented 27th January, 1913.—*Mr. Kyte*.....*Not printed.*

105. Return to an Order of the House of the 4th December, 1912, for a copy of all the different freight tariffs in force on the line of railway from Matapedia, Quebec, to New Carlisle, Quebec, and from New Carlisle, to Gascons, Quebec, and vice versa, and of any requests that have been received in regard to the change in the same; and also a copy of any requests, petitions, letters, or other documents complaining of the said tariffs. Presented 27th January, 1913.—*Mr. Marcil (Bonaventure).* *Not printed.*

105*a*. Return to an Order of the House of the 10th December, 1912, for a copy of the different freight tariffs in force on the line of railway from Sunny Brae to Ferrona Junction, on the Intercolonial Railway, and of any requests that have been received in regard to the change in the same, and also a copy of any requests, petitions, letters or other documents complaining of said tariff. Presented 27th January, 1913. —*Mr. Sinclair*.....*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

106. Return to an Order of the House of the 5th December, 1912, for a copy of the original instructions, including maps, specifications, profiles, &c., furnished the engineers on the eastern division of the Transcontinental railway between Winnipeg and Quebec by the chief engineer of the Transcontinental Commission, and approved by the Grand Trunk Pacific Railway Company. Also of all instructions, including specifications and profiles, issued by the chief engineer of the Transcontinental Commission or by the chairman, since 31st October, 1911, which in any way vary, amend, or depart from the original instructions above mentioned. Also, of all correspondence between the Minister of Railways or any official of his department and the chairman of the Transcontinental Commission, or the chief engineer, concerning the departure from the original instructions, either as to the grades, curves and bridges or other permanent structures. Also a copy of all correspondence between the Minister of Railways or any member of the government and any official of the Grand Trunk Pacific Railway Company referring to change of original instructions as regards grades, curves or permanent structures on the said line between Winnipeg and Quebec; and also of all correspondence between the chairman of the Transcontinental Commission or the chief engineer and any official of the Grand Trunk Pacific Railway Company, or any member of its engineering staff, concerning the proposed change of grades, curves, or other permanent structures on the line of the Transcontinental between Winnipeg and the City of Quebec. Presented 30th January, 1913—*Mr. Graham.*
Not printed.

106*a*. Return to an Order of the House of the 7th May, 1913, for a copy of a letter, dated 24th September, 1904, written by Chief Engineer Lumsden of the Transcontinental Commission to Chairman Wade of the same body, in which the former recommended to the latter certain grades on the Transcontinental railway. Presented 15th May, 1913.—*Mr. Graham*.....*Not printed.*

107. Return to an Order of the House of the 20th January, 1913, for a copy of all papers in connection with a claim of L. A. Sauvé to certain buildings at La Pointe des Cascades, on the Soulanges canal, and of all correspondence on the same. Presented 30th January, 1913.—*Sir Wilfrid Laurier*.....*Not printed.*

108. Return to an Order of the House of the 5th December, 1912, for a copy of the contract entered into between the Department of Railways and Canals and W. H. Weller for St. Peters canal improvements, and for a copy of all correspondence between the contractor or any other person, firm or corporation and the Honourable Minister of Railways and Canals relating to the dumping of material removed by the contractor. Presented 30th January, 1913.—*Mr. Kyte*.....*Not printed.*

108*a*. Return to an Order of the House of the 27th January, 1913, for a copy of all correspondence between the Department of Railways and Canals and C. D. Sargent, C.E., and between C. D. Sargent, C.E., and H. G. Stanton, Superintending Engineer of the St. Peters Canal, or between W. H. Weller, contractor for the St. Peters canal improvements, and either or all of said parties relative to work done by the contractor outside of his contract, and the specifications thereof, and also a copy of all correspondence, letters and telegrams between the Department of Railways and Canals or C. D. Sargent, C.E., and any other person, in regard to the same; and of all accounts and vouchers rendered by the contractor to the government of such work, and the payment made by the government to the contractor, specifying whether the same is paid for in full or otherwise. Presented 21st April, 1913.—*Mr. Kyte.*
Not printed.

108*b*. Return to an Order of the House of the 19th March, 1913, for a copy of the accounts of personal expenses paid to Mr. St. Amour, Superintendent of the Soulanges Canal,

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since he entered upon his duties.—Also return to an Order of the House of the 2nd April, 1913, for a copy of all accounts for personal expenses paid by the government to Mr. St. Amour, Superintendent of the Soulanges Canal, since the date of his appointment. Presented 29th April, 1913.—*Mr. Boyer*.....*Not printed.*

109. Return to an Order of the House of the 10th December, 1912, for a copy of all correspondence, letters, telegrams, petitions and other documents received since the 1st day of January, 1912, asking that the line of railway known as the Vale Road, should be taken over by the Intercolonial Railway. Presented 30th January, 1913.—*Mr. Macdonald*.....*Not printed.*

110. Return to an Order of the House of the 27th January, 1913, for a copy of all correspondence in connection with the issuing of letters patent to the Quebec Railway, Light, Heat and Power Company, Limited, and also said letters patent. Presented 30th January, 1913.—*Mr. Lemieux*.....*Not printed.*

111. Return to an Order of the House of the 9th December, 1912, for a copy of all papers, documents, correspondence, &c., between the Department of Trade and Commerce and Mr. Donnelly, late Canadian Trade Commissioner in Mexico, relating to the closing of the office of such trade commissioner in Mexico. Presented 3rd February, 1913.—*Mr. Maclean (Halifax)*.....*Not printed.*

112. Return called for by Section 88 of Chapter 62, Revised Statutes of Canada, requiring that the Minister of the Interior shall lay before parliament, each year, a return of liquor brought from any place out of Canada into the territories by special permission in writing of the Commissioner of the Northwest Territories. Presented by Hon. Mr. Roche, 3rd February, 1913.....*Not printed.*

113. Return to an Order of the House of the 22nd January, 1913, for a copy of all letters, telegrams and other papers and documents, relating to the resignation of Lt.-Col. W. F. Moore, 20th Regiment, Halton Rifles, and also of the resignation and the reply thereto. Presented 6th February, 1913.—*Mr. Macdonald*.....*Not printed.*

114. Return to an Order of the House of the 20th January, 1913, for a copy of all letters, papers, telegrams and other documents in connection with the strike of firemen and other men employed on the D.G.S. *Earl Grey*, in the year 1912 and 1913. Presented 11th February, 1913.—*Mr. Macdonald*.....*Not printed.*

115. Return to an Order of the House of the 27th March, 1912, for a copy of all papers, letters and telegrams relating to the applications for, or the granting of, a lease of False Cove Flats, Vancouver, B.C. Presented 11th February, 1913.—*Mr. Macdonald.* *Not printed.*

116. Return to an Order of the House of the 27th January, 1913, for a copy of all correspondence and other papers in connection with a proposed guarantee of bonds to the Quebec and Saguenay railway. Presented 11th February, 1913.—*Mr. Lemieux*....*Not printed.*

116*a*. Return to an Order of the House of the 9th April, 1913, for a copy of all documents, including petitions, memorials, letters and telegrams, addressed to the government, or any of its members, urging it to take over and incorporate into the Canadian government railway system, the Quebec and Oriental Railway and the Atlantic, Quebec and Western Railway, with a copy of all the answers thereto. Presented 20th May, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

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116*b*. Return to an Address to His Royal Highness the Governor General of the 11th December, 1912, for a copy of all orders in council in connection with the construction of a line of railway from St. John to Grand Falls in the Province of New Brunswick, or any portion thereof and also of all plans and profiles filed with the Department of Railways and Canals by the St. John and Quebec Railway Company, and of all correspondence between the Department of Railways and Canals or any official thereof and with the said company or the Government of the Province of New Brunswick, or any official thereof, with reference to the curves, grades or general specifications of the said railway or any portion thereof. Presented 20th May, 1913.—*Mr. Carvell.*
Not printed.

116*c*. Return to an Order of the House of the 28th April, 1913, for a copy of all memorials, petitions, letters, and other documents submitted to the Board of Railway Commissioners from 1st January, 1913, to date, by any party whatsoever regarding the service of the Quebec and Oriental Railway and the Atlantic, Quebec and Western Railway, as to freight, passengers and express matters, with a copy of all orders and rulings issued by such Board and of all correspondence in connection therewith. Presented 20th May, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

117. Return to an Address to His Royal Highness the Governor General of the 5th December, 1912, for a return showing the number of appeals made to the Governor in Council during the twelve months preceding 25th November, 1912, against orders of the Board of Railway Commissioners, the particulars of each appeal, and the decision rendered by the Governor in Council in each case. Presented 11th February, 1913.—*Mr. Graham* .....*Printed for sessional papers only.*

118. Return to an Address to His Royal Highness the Governor General of the 22nd January, 1913, for a copy of all orders in council and of all correspondence relating to the extension of facilities for obtaining information useful to Canadian Trade and Commerce in connection with the British Consular Service. Presented 11th February, 1913.—*Mr. Ames*.....*Not printed.*

119. Return to an Order of the House of the 24th January, 1913, for a return showing all the employees of the different departments at Ottawa, and also in the nine provinces and territories of Canada, and other places outside of Canada, in the inside and outside service, who have left their employment since the 1st October, 1911, up to the 10th January, 1912, inclusively, with their names, Christian names, age, nationality, employment and salaries respectively; the date of their appointment; the date of their leaving; their salaries, the time of their appointment and at leaving; the reasons of their leaving; and if replaced or not; the names, Christian name, age, nationality, employment and salary of those who have replaced them; and in the case of dismissals, a list of the persons who asked for their dismissals; in the case of these replacing them, a list of the persons who recommended their successors Presented 11th February, 1913.—*Mr. Wilson (Laval)*.....*Not printed.*

119*a*. Supplementary return to an Order of the House of the 24th January, 1912, for a return showing all the employees of the different departments at Ottawa, and also in the nine provinces and territeries of Canada, and other places outside of Canada, in the inside and outside service, who have left their employment since the 1st October, 1911, up to the 10th January, 1912, inclusively, with their names, Christian names, age, nationality, employment and salaries respectively; the date of their appointment; the date of their leaving; their salaries at the time of their appointment and at leaving; the reasons of their leaving; and if replaced or not; the names, Christian name, age, nationality, employment and salary of those who have replaced them;

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and in the case of dismissals, a list of the persons who asked for their dismissals; in the case of these replacing them, a list of the persons who recommended their successors. Presented 17th March, 1913.—*Mr. Wilson (Laval)*.....*Not printed.*

120. Return to an Address to His Royal Highness the Governor General of the 5th February, 1912, for a copy of all tenders, contracts, reports and other memoranda of the engineers of the Department of Public Works, orders in council, correspondence and all other documents relating to the construction of a dam for storage purposes at the foot of Lake Timiskaming. Presented 12th February, 1913.—*Mr. Pugsley.*

Not printed.

120*a*. Return to an Order of the House of the 4th March, 1912, for a copy of all contracts, correspondence or writings whatsoever, respecting the construction of a dam in 1902 or 1909, called the Lake Timiskaming dam constructed or built over the rivers forming the inflow or the discharge of the said lake, exchanged between the Government of Canada and the contractor or contractors. Presented 12th February, 1913.—*Mr. Boulay*.....*Not printed.*

121. Return to an Order of the House of the 28th March, 1912, for a return giving a list of the subjects of the oil paintings and water colours which have become the property of the National Gallery of Canada since 1891; and the names of the artists in each case. Presented 12th February, 1913.—*Mr. Burnham*.....*Not printed.*

122. Return to an Order of the House of the 27th January, 1913, for a copy of all documents, letters, correspondence, reports, recommendations, &c., relating to the petition of Mr. Firmin Thibault, of St. Denis, County of Kamouraska, for his indemnity for having served at the time of the Fenian invasion. Presented 13th February, 1913—*Mr. Lapointe (Kamouraska)*.....*Not printed.*

123. Return to an Order of the House of the 27th January, 1913, for a return showing what date or dates the government purchased the site for the new Dominion Rifle Range in the County of Carleton, Ontario, from whom were the several parcels of land purchased, and what price per acre was paid for each, the number of acres of land purchased, and the total amount paid therefor, if any buildings have been erected on the said lands by the government, and the cost thereof, the amounts paid by the government for commissions, fees, agency charges, and legal expenses, and to whom in connection with said purchase, the amount of money expended by the Government on the said range for all purposes, from the date of the original purchase of the land up to 23rd January, 1913, and any sums remaining to be paid in any way connected with the purchase of the said range, to whom and the respective amounts thereof, the distance from the post office in the City of Ottawa to the said range, if any line of electric or other railway runs from the City of Ottawa to the said range, and what means of transportation will be provided for riflemen going to and returning from the said range. Presented 13th February, 1913—*Mr. Wilson (Laval)*.....*Not printed.*

124. Return to an Address to His Royal Highness the Governor General of the 10th February, 1913, for a copy of the memorial presented to the Government during the session of 1911-12, by a delegation from the Government of Prince Edward Island asking for an increased provincial subsidy, a copy of which memorial was laid on the Table of the House by the Finance Minister last session of Parliament, but is not now apparently on the files of the House Presented 17th February, 1913.—*Mr. Hughes (Kings, P.E.I.)*.....*Printed for sessional papers only.*

125. Return to an Address to His Royal Highness the Governor General of the 9th December, 1912, for a copy of all papers, letters, telegrams and correspondence between the Government of Canada or any member thereof, since 1st November, 1911, to the pre-

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sent time, with any corporation, company, party or parties, in any way relating to the Customs Tariff upon cement or to the temporary reduction made of the Customs Tariff upon cement; also for a copy of all letters and correspondence by and between members of the Government of Canada during the same period relating to the same subject, and of all papers, documents, memoranda and orders in council relative to the reduction of the Customs Tariff upon cement made by order in council since the close of the last session of parliament. Presented 17th February, 1913.—*Mr. Maclean (Halifax)*.....*Not printed.*

125a. Return to an Address to His Royal Highness the Governor General of the 20th January, 1913, for a copy of all petitions since the 1st of October, 1911, addressed to the Governor General in Council or to any member of the government, asking for a remis ion and the adjustment of duty on cement, of all letters to the ministers individually on the same, of all correspondence and of all orders in council. Presented 21st February, 19 3.—*Sir Wilfrid Laurier*.....*Not printed.*

125b. Return to an Address to His Royal Highness the Governor General of the 9th December, 1912, for a copy of all papers, documents, petitions, orders in council, letters and telegrams in any department of the government of Canada, or that passed between the Department of Customs and the Department of Justice or any solicitor, counsel, association, company or individual, during the past twelve months, respecting the imposition of tariff duties upon imported lumber dressed on one side and sized, or respecting the interpretation of tariff item No. 504, together with a printed copy of any stated case, appeal, factum or argument used before the Exchequer Court of Canada or the Supreme Court of Canada, in the matter of the judicial interpretation of tariff item No. 504. Presented 4th June, 1913.—*Mr. Maclean (Halifax)*

Not printed.

126. Return to an Order of the House of the 4th December, 1912, for a copy of all correspondence passing between the government or any member thereof with respect to the east half of Section 27 in township six (6) in range two (2) west of the third meridian. Presented 17th February, 1913.—*Mr. Martin (Regina)*.....*Not printed.*

127. Return to an Order of the House of the 27th January, 1913, for a return showing when the militia or regular forces was first called out in Canada since Confederation in aid of the civil authorities, how often, when and where has the same been called out since, the amount of money paid by each municipal corporation for such service in each case, what corps called out on each occasion, whether to quell strikes in each instance or for what purpose. Presented 18th February, 1913.—*Mr. Macdonald.*

Not printed.

128. Return to an Order of the House of the 29th January, 1913, for a copy of all correspondence, papers, &c., concerning the application by James McKelvey, of the town of Sarnia, Ontario, for Fenian Raid Volunteer Bounty. Presented 18th February, 1913.—*Mr. Macdonald*.....*Not printed.*

129. Return to an Order of the House of the 10th February, 1913, for a copy of all documents, correspondence, memorandums, reports, requests for inquiries, of the appointment of commissioners and other documents, relating to the study of the causes for the depopulation of country places and the high cost of living in the eastern provinces of the Dominion. Presented 18th February, 1913.—*Mr. Paquet*.....*Not printed.*

130. Return to an Order of the House of the 9th December, 1912, for a copy of all papers, documents, memoranda and correspondence relating to the application of the Banque Internationale to the Treasury Board for a certificate for the commencement of business. Presented 18th February, 1913.—*Mr. Maclean (Halifax)*.....*Not printed.*

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131. Return to an Order of the House of the 4th December, 1912, for a copy of all papers, documents, telegrams, reports, letters, and instructions regarding smelt and salmon fishing in the Restigouche river and the Baie des Chaleurs since October, 1911, up to date, together with copy of instructions issued to officials of the Department of Marine and Fisheries in that connection. Presented 18th February, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

132. Return to an Order of the House of the 29th January, 1913, for a copy of all correspondence and papers concerning the increase of salary of Mr. Sevigny, employed at the immigration office at Montreal. Presented 18th February, 1913.—*Mr. Carvell.*
Not printed.

133. Return to an Order of the House of the 5th February, 1913, for a return showing whether any order for goods has been given by the Department of Public Works since 1st October, 1911, at Montreal, Quebec, St. John and Halifax; tenders asked for in each case; orders for goods given without tenders; names of firms, and amounts in each case. Presented 19th February, 1913.—*Mr. Macdonald*.....*Not printed.*

134. Return to an Order of the House of the 10th December, 1912, for a copy of all correspondence and other papers, in the Department of Public Works, concerning the awarding of a contract for a Welsh coal supply to the various Dominion public buildings in Montreal. Presented 19th February, 1913.—*Mr. Lemieux*....*Not printed.*

135. Return to an Order of the House of the 5th December, 1912, for a return showing how many dredging contracts were let by the Department of Public Works during the year 1911-12, the name of each tenderer and the amount of each tender. Presented 19th February, 1913.—*Mr. Lemieux*.....*Not printed.*

135*a*. Return to an Order of the House of the 4th December, 1912, for a return showing the quantity by cubic yards of dredging made in the harbour of Bathurst by the dredge *Restigouche* during the months of May, June, July, August, September, October, and November of the year 1911, and during the same months in the year 1912. Presented 19th February, 1913.—*Mr. Turgeon*.....*Not printed.*

135*b*. Return to an Order of the House of the 10th December, 1912, for a copy of all correspondence, documents, recommendations and reports respecting the dredging Des Prairies river, the work done, depth, length and width of channel dredged, the list of men employed to perform that work, their salaries, and the amount of money spent on that work since the 1st of October, 1911, up to the 21st November, 1912. Presented 12th May, 1913.—*Mr. Wilson (Laval)*.....*Not printed.*

135*c*. Return to an Order of the House of the 3rd March, 1913, for a copy of all documents, letters, reports of engineers and a detailed statement of expenditure in connection with dredging at Ste. Anne de Restigouche and Cross Point, Bonaventure County. Presented 4th June, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

135*d*. Return to an Order of the House of the 19th March, 1913, for a return showing the amount of dredging done by the government dredges for private parties or firms in Prince Edward Island, during the season of 1912; the names of the parties or firms for whom this dredging was done; the number of yards of material dredged for each party or firm; the class of material dredged, and the price per yard the government charged for this dredging; who measured the material dredged, and whether it was scow measurement that was made; who recommended the said dredging to be done; if the resident engineer or any engineer was consulted in regard to the measuring, and if the resident engineer or any engineer had control over the matter at all. Presented 6th June, 1913.—*Mr. Hughes (Kings, P.E.I.)*.....*Not printed.*

CONTENTS OF VOLUME 27—*Continued.*

136. Return to an Order of the House of the 9th December, 1912, for a copy of the accounts of Jean Baptiste Lena and of his wife, for work done to the public buildings at Valleyfield, Quebec, in May, 1912; also for a copy of all correspondence, reports and documents relating to the payment in full or a part of their accounts. Presented 19th February, 1913.—*Mr. Papineau*.....*Not printed.*

137. Return to an Order of the House of the 4th December, 1912, for a return showing the amount of money expended in improving the channel of the Ottawa river between the city of Hull and the village of Masson. Presented 19th February, 1913.—*Mr. Devlin.* *Not printed.*

138. Return to an Order of the House of the 4th December, 1912, for a copy of all documents relating to the transferring of P. E. Amiot, resident engineer of the Department of Public Works, Bonaventure, Quebec, to the district of Chicoutimi and Saguenay, and the appointment in his stead, in Bonaventure County, of Charles E. Tache, of Chicoutimi, as resident engineer, with a copy of all the instructions given to the latter and his duties, residence and salary. Presented 19th February, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

139. Return to an Order of the House of the 4th December, 1912, for a copy of all petitions, correspondence, memoranda, reports, and resolutions of county or other municipal councils of Bonaventure County asking or objecting to certain public works in Bonaventure County since October, 1911, with the Minister of Public Works, or any member of the present administration, and replies made thereto. Presented 19th February, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

140. British Canadian Loan and Investment Company, Limited, Toronto, for year 1911.—*(Senate)*.....*Not printed.*

141. Claims of present fish warden, Baker Lake, County of Madawaska, N.B.—*(Senate)*. *Not printed.*

141*a*. Return to an Order of the House of the 29th January, 1913, for a copy of all letters, telegrams, reports, information, convictions and other documents in the possession of the Department of Marine and Fisheries or any officer thereof relating to the prosecution in the year 1910, against George Rowlings and James Rowlings, of Musquodoboit Harbour, County of Halifax, for a violation of the fishery regulations. Presented 21st May, 1913.—*Mr. Sinclair*.....*Not printed.*

141*b*. Return to an Order of the House of the 29th January, 1913, for a copy of all papers, letters, telegrams and documents or other communications, had with the Department of Marine and Fisheries or any official thereof, in regard to the prosecutions against the following parties:—Samuel Stewart, Melvin Hart, Andrew McNeil, Thomas McNeil, Hugh Malcolm, Tom Moffatt, James Waddin, Samuel Wright and Dougald Higgins, of Westville, County of Pictou, for infractions of the Fisheries Act, and of any applications or letters relative to relief from the fines imposed or the return of the same; and also of all papers, letters, and other documents relating to a charge against Rod. Martin, of Westville aforesaid, a fishery guardian, for illegal fishing and other offences. Presented 21st May, 1913.—*Mr. Macdonald*.....*Not printed.*

141*a*. Claims of Messrs. Boulanger and Son, Montmagny, Quebec.—*(Senate)*....*Not printed.*

142. Copy of Report of Minister of Justice in *re* Florence Mining Company.—*(Senate)*. *Not printed.*

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143. Instruction sent to the different Lieutenant Governors of different provinces of Canada, with commissions.—(*Senate*)..... .....*Not printed.*

144. Return to an Order of the House of the 15th January, 1913, for a copy of all papers, letters, documents, telegrams, reports and opinions in relation to the claim of William Iceton, of Purcell's Cove for a return of a boat from the Department of Marine and Fisheries or any other department. Presented 20th February, 1913.—*Mr. Macdonald* ....*Not printed.*

145. Return to an Address to His Royal Highness the Governor General of the 9th December 1912, for a copy of all papers, telegrams, letters and orders in council respecting the transfer of the property known as the Police Point Reserve to the corporation of the City of Medicine Hat, Alberta. Presented 20th February, 1913.—*Mr. Buchanan.* *Not printed.*

146. Return to an Order of the House of the 29th January, 1913, for a copy of the inquiry made by F. B. Atkinson, Lévis, as to an accident that happened to the horse of Arsene Lauzier, at Amqui, County of Rimouski, on the 19th February, 1912. Presented 20th February, 1913.—*Mr. Boulay*.....*Not printed.*

147. Correspondence, memoranda, &c., in respect to the issue of a patent for the N. ½ of S. W. ¼ of section 8, in township 49, range 26, west of the 2nd meridian, to one Arthur Donaldson, bearing date the 19th November, 1912. Presented by Hon. Mr. Roche, 20th February, 1913..... .....*Not printed.*

147*a*. Return to an Order of the House of the 12th February, 1913, for a copy of all letters, telegrams and other documents with respect to the north half of the southwest quarter of section eight (8), township forty-nine (49), range twenty-six (26), west of the second meridian, province of Saskatchewan, and the granting of a homestead entry for the said land to one Arthur Donaldson. Presented 6th June, 1913.—*Mr. Martin (Regina)*..... .....*Not printed.*

148. Return to an Order of the House of the 12th February, 1913, for a copy of all papers, reports and other documents relating to the delay of the Indian Department in issuing patents for lands purchased from the St. Peters band of Indians, and forming part of the St. Peters Indian reserve, Manitoba. Presented 25th February, 1913. —*Mr. Oliver*..... .....*Not printed.*

149. Return an Address to His Royal Highness the Governor General of the 27th January, 1913, for a copy of all applications addressed to the Government by the Algoma Steel Company for remission of duties on rails imported by the said company at Fort William; of all correspondence on the same, of all evidence sought and obtained by the government and supplied by the company in support of its application; and of all orders in council ordering such remission of duties. Presented 25th February, 1913.—*Sir Wilfrid Laurier*..... .....*Not printed.*

150. Return to an Order of the House of the 24th February, 1913, for a return showing the stenographers and secretaries of the House of Commons, and the names of the members for whom each of them work. Presented 26th February, 1913.—*Mr. Boulay.* *Not printed.*

150*a*. Return to an Order of the House of the 31st March, ultimo, for a return giving the names and home addresses of the persons employed in the House of Commons as stenographers to members. Presented 1st April, 1913.—*Mr. Martin (Regina).* *Not printed.*

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151. Return to an Order of the House of the 16th January, 1913, for a return showing the number of bushels of grain and barrels or sacks of flour which were shipped from Montreal, Quebec, St. John, N.B., and Halifax, for twelve months preceding the 31st day of December, 1912; the kinds of each product respectively, and the quantities of said commodities at each of above points which were domestic and foreign. Presented 26th February, 1913.—*Mr. Bennett (Simcoe)*.....*Not printed.*

152. Return to an Order of the House of the 19th February, 1913, for a return showing in detail the quantity and values, respectively, of the imports and exports of Canada with Great Britain, United States, Australia and New Zealand, during the year ending 31st March, 1912, in horses, cattle, sheep, hogs, bacon, hams, fresh and salted beef, lard, tallow, mutton, canned meats, butter, cheese, eggs, poultry and apples. Presented 26th February, 1913.—*Mr. Sutherland*.....*Not printed.*

153. Return to an Address to His Royal Highness the Governor General of the 26th February, 1912, for a copy of all letters, documents and correspondence relating to action by the Government in regrd to the relief of the shareholders and depositors of the Farmer's Bank, and of the order in council appointing Sir William Meredith as Commisioner, and all correspondence in relation thereto. Presented 26th February, 1913. —*Mr. Macdonald*.....*Not printed.*

153*a*. Report of the Honourable Sir William Ralph Meredith, Kt., Commissioner appointed to make investigation into all matters connected with the Farmers Bank of Canada. Presented by Hon. Mr. White, 26th February, 1913.

Printed for distribution and sessional papers.

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(This volume is bound in three parts.)

153*b*. Report of Royal Commission authorized by orders in council dated 19th day of July, 1912, and the 5th day of August, 1912, to inquire into alleged complaints as to methods of weighing butter and cheese in Montreal, and also as to the methods of payment. Presented by Hon. Mr. Burrell, 30th May, 1913.

Printed for distribution and sessional papers.

154. Return to an Order of the House of the 27th January, 1912, for a return showing the amount of the subsidy paid to each of the four original provinces of the Dominion at Confederation, and the population on which such payment was based; the subsidy payable to each of the remaining five provinces on entering the union, and the population on which such payment was based; the sum added to the subsidy of any province as better terms, and the date which such addition was made respectively; the details of each readjustment of subsidies since 1867, and the yearly subsidy at present payable to each province, with the population on which such payment is based, and the original debt allowance, if any, respectively, placed to the credit of each province on entering the union. Presented 27th February, 1913.—*Mr. Sinclair.*

Printed for sessional papers only.

155. Return to an Order of the House of the 29th January, 1913, for a copy of all correspondence in regard to the disposition of the Marine Hospital at Pictou to the town of Pictou, or any other corporation or person. Presented 27th February, 1913.—*Mr. Macdonald*.....*Not printed.*

156. Return to an Order of the House of the 29th January, 1913, for a copy of all letters, tenders, contracts, papers and other documents in the possession of the Department of Marine and Fisheries relating to the making and cancellation of a contract or agreement between the said department and one Charles G. Giffin, of Isaac Harbour,

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N.S., to perform certain services for the lobster hatchery at that place, and also relating to a subsequent agreement with one Philip McArthur to perform similar duties. Presented 27th February, 1913.—*Mr. Sinclair*.....*Not printed.*

157. Return to an Order of the House of the 29th January, 1913, for a copy of all papers and correspondence concerning the claim of Charles Mennier, ex-Collector of Customs at Marieville, Quebec, for rent. Presented 28th February, 1913.—*Mr. Lemieux.* *Not printed.*

158. Return to an Order of the House of the 9th December, 1912, for a copy of all letters, correspondence, documents and reports relating to the closing of the post office at Pomket river, Antigonish County, Nova Scotia, and the cancellation of the contract for the carrying of the mail between Heatherton and Pomket river. Presented 28th February, 1913.—*Mr. Chisholm (Antigonish)*.....*Not printed.*

158*a*. Return to an Order of the House of the 27th January, 1913, for a copy of all letters, telegrams, petitions and other correspondence and documents received by the Post Office Department during the last twelve months from the honourable member for East Grey and others, relating to the closing of the post office at Harkaway, County of Grey, province of Ontario, and of the proposed change in the mail service. Presented 28th March, 1913.—*Mr. Lanctot*.....*Not printed.*

159. Claims put forth by and on behalf of Indians of British Columbia—Report of James T. McKenna on.—(*Senate*).....*Not printed.*

159*a*. Return to an Address to His Royal Highness the Governor General of the 20th January, 1913, for a copy of all correspondence between the Government of British Columbia and the Government of Canada concerning the rights and claims of the Indians in the province, and of all orders in council with regard to the same. Presented 14th May, 1913.—*Sir Wilfrid Laurier*.....*Not printed.*

159*b*. Return to an Order of the House of the 28th April, 1913, for a copy of all correspondence, reports and recommendations from Rev. R. L. Macdonald, Indian agent at Salmon River reserve, Richmond County, N.S., relating to the Indian school in said reserve; and of all correspondence and instructions from the Department of Indian Affairs to the said Indian agent, relating to the same; also a copy of all complaints, charges and reports against Miss Charlotte M. Devereaux, teacher of the said school, and of all correspondence and recommendations relating to the appointment of Earnest McNeil to succeed her, since 1st January, 1912. Presented 23rd May, 1913.—*Mr. Kyte*.....*Not printed.*

159*c*. Return to an Order of the House of the 12th May, 1913, for a copy of the last surrender and of all papers, correspondence and other documents in connection with the surrender of part of the White Bear Indian Reserve; together with a copy of all letters and telegrams referring to this surrender by officials of the Department or others, and of the authority on which this surrender was taken, the number of acres surrendered, and how disposed of. Presented 23rd May, 1913.—*Mr. Bradbury.* *Not printed.*

159*d*. Return to an Order of the House of the 30th April, 1913, for a copy of all letters, papers, memoranda and other documents, dated since 1st January, 1912, relating to the Kitsilano Indian Reserve in the City of Vancouver. Presented 23rd May, 1913.—*Mr. Oliver*.....*Not printed.*

160. Immigrants—number of, who settled in Canada, in 1911-12, and from whence.—(*Senate*). *Not printed.*

CONTENTS OF VOLUME 28.—*Continued.*

160a. Return to an Order of the House of the 7th May, 1913, for a return showing the number of immigrants coming into Canada during the year ending 31st March, 1913, inspected by the government medical inspectors; the total cost of such medical inspections; the number of medical doctors employed by the government during that period; the name, salary and location of each, including those resident in Ottawa. Presented 6th June, 1913.—*Mr. Schaffner*.....*Not printed.*

161. Correspondence with Mr. V. Steffansson concerning northern expedition. Presented by Hon. Mr. Hazen, 3rd March, 1913.....*Not printed.*

161a. Copy of order in council No. P.C. 406 of the 22nd February, 1913, with reference to Mr. V. Steffansson's proposed northern expedition. Presented by Hon. Mr. Hazen, 10th March, 1913.....*Not printed.*

162. Return to an Address to His Royal Highness the Governor General of the 25th March, 1912, for a copy of all letters, requests, petitions, orders in council and other documents in the possession of the Department of Marine and Fisheries relating to the change in the fishery regulations by which steam trawlers were prohibited from participating in the fishing bounty. Presented 3rd March, 1913.—*Mr. Sinclair.*
Not printed.

162a. Return to an Address to His Royal Highness the Governor General, of the 10th February, 1913, for a copy of all petitions, correspondence, reports of experts or officers, of orders in council, minutes of council, and of other papers and documents in the possession of the Department of Marine and Fisheries, or any department of the government, relating to steam trawling on the Atlantic seaboard. Presented 15th April, 1913.—*Mr. Sinclair*.....*Not printed.*

163. Return to an Order of the House of the 19th February, 1913, for a copy of all correspondence, papers, accounts, vouchers, concerning the purchase and subsequent repairs of a private car by the Department of Militia and Defence, from the Canadian Northern Railway Company. Presented 3rd March, 1913.—*Mr. Lemieux.*
Not printed.

164. Return to an Order of the House of the 24th February, 1913, for a return showing separately the amount paid by the Department of Indian Affairs for medical attendance on account of the Indians on the Micmac reserve of Ste. Anne de Restigouche, Quebec, for each year from 1900 to 1913, inclusive, and to whom paid. Presented 10th March, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

165. Return to an Order of the House of the 19th February, 1913, for a copy of all correspondence, letters, telegrams and other documents relative to the sale of alleged Indian lands at Nyanza, riding of North Cape Breton and Victoria, N.S., to one Philip McDonald, such sale having taken place about the year 1877. Presented 17th March, 1913.—*Mr. McKenzie*.....*Not printed.*

165a. Return to an Order of the House of the 7th May, 1913, for a return showing the number of acres surrendered by the Coté's Band of Indians, the number of acres sold by private sale, the number of acres still unsold; together with a copy of all letters from persons who made application for purchase of surrendered lands in Coté's reserve, or from any person on behalf of purchasers and replies thereto; and of all reports, letters or memoranda addressed to the Superintendent General of Indian Affairs, from any officer of the department respecting the private sale of said lands; also a copy of any document or documents covering the authority under which these lands were sold by private sale, and of all letters addressed to the department, or any officer of department, respecting the sale of said lands. Presented 3rd June, 1913.—*Mr. Bradbury*.....*Not printed.*

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166. Return to an Order of the House of the 12th February, 1913, for a copy of all letters, reports and other documents received by the Minister of Labour regarding labour conditions on the Grand Trunk Pacific between Tête Jaune Cache and Fort George. Presented 17th March, 1913.—*Mr. Oliver*.....*Not printed.*

167. Return to an Address to His Royal Highness the Governor General of the 3rd February, 1913, for a copy of all telegrams, letters and other documents passing between the Government of Canada, or any member thereof, and the Government of the Province of Saskatchewan, or any member thereof, with respect to chapter 17 of the statutes of Saskatchewan, 1912, being an Act to prevent the employment of female labour in certain capacities. Presented 17th March, 1913.—*Mr. Martin (Regina)*.....*Not printed.*

168. Return to an Order of the House of the 10th December, 1912, for a copy of all correspondence, petitions and other papers received by the Prime Minister, or any member of the government, since the 1st April, 1912, in connection with the school system established in that portion of the Keewatin Territory annexed to the province of Manitoba. Presented 17th March, 1913.—*Mr. Macdonald*.....*Not printed.*

169. Return to an Order of the House of the 29th January, 1913, for a return showing the number of accidents to lock gates or bridges on the Welland Canal during the year ending 25th November, 1912, the nature of the accidents, the amount of damage in each case and the amount recovered by the Government from vessel owners in each instance. Presented 18th March, 1913.—*Mr. Graham*.....*Not printed.*

170 Return to an Order of the House of the 3rd March, 1913, for a copy of the contract passed on the 6th day of August, 1910, between the City of Quebec and the Transcontinental Railway Commissioners, for the acquisition by the latter of the property known as Champlain Market, to be used as a station and terminals for the said railway; of all the correspondence between the said city and the present Commissioner of the said railway, with the Minister of Railways, or any other Minister, with regard to the non-execution of the said contract by the said commission. Presented 18th March, 1913.—*Sir Wilfrid Laurier*.....*Printed for sessional papers only.*

171. Return to an Order of the House of the 29th of January, 1913, for a copy of all letters, correspondence, &c., respecting the request for suspension by H. Boulay, of J. Stahl, assistant inspector of immigration on the railway. Presented 19th March, 1913.—*Mr. Boulay* ....*Not printed.*

172. Return to an Order of the House of the 17th February, 1913, for a return showing the total area of land thrown open for pre-emption and purchased homesteads in each of the provinces of Saskatchewan and Alberta since the passing of the Dominion Lands Act of 1908; also the number of acres of such lands which have been disposed of by way of pre-emptions and purchased homesteads in each of the said provinces, the amount of principal money collected on account of such lands in each of the said provinces up to 31st December, 1912, and the amount of interest collected on account of such lands in each of the said provinces to 31st December, 1912. Presented 19th March, 1913.—*Mr. Martin (Regina)*.....*Not printed*

173. Return to an Order of the House of the 10th February, 1913, for a copy of all letters, correspondence, memorials and other documents received by the Right Honourable the Prime Minister and the Honourable the Minister of Justice, since the 1st day of January, 1912, relating to the request by county court judges for an increase of salary and for an amendment to the Judges Act with respect to retiring allowances. Presented 26th March, 1913.—*Mr. Proulx*.....*Not printed.*

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174. Return to an Order of the House of the 13th February, 1913, for a return showing the names of the keepers in Portsmouth penitentiary, and their religious belief; the names of any of the said keepers who may have been dismissed, the date, charges and on whose recommendation were they reinstated. Presented 26th March, 1913.—*Mr. Edwards*.....*Not printed.*

174a Return to an Order of the House of the 13th February, 1913, for the name of the discipline officer in charge of each of the following departments in Portsmouth penitentiary, the date when each was first appointed on the penitentiary staff, the date to his present position, and the religious belief of each: Quarry, farm, warden's residence and grounds, blacksmith shop, bath room and laundry, stone shed, tailor and shoe shop, changing room, stone pile, sewage plant, asylum ward, cell wings, library and Roman Catholic and Protestant chapels, hospital, shop dome, carpenter, tin and paint shop, and prison of isolation. Presented 26th March, 1913.—*Mr. Edwards.*
Not printed.

175. Return to an Order of the House of the 17th February, 1913, for a copy of all statements of account for salary or remuneration to the Commissioner, and his expenses, for witness fees and all other expenses in connection with the investigations by Commissioner Duchemin, of the following persons in Antigonish County namely: Patrick M. Decoste, deckhand SS. *Scotia*, Harbour au Boucher; William R. Fougère, sectionman, Harbour au Bouche; Allen Kinney, sectionman, Linwood; Hubert Myatte, sectionman, Tracadie; John McDonell, sectionman, Afton Station; John W. Malanson, sectionman, Afton; James Armstrong, sectionman, Heatherton; Charles Landry, sectionman, Pomket; William S. Landry, section foreman, Pomket; Colin McDonald, sectionman, James River; Archibald Chisholm, station agent, Heatherton; Joseph Benoit, station agent, Pomket; Alex. R. McAdam, fishery officer, Malignant Cove; Alex. McDonald, sub-collector, Doctors Brook; Charles L. Gass, sub-collector, Bayfield; Jeffrey M. Crispo, sub-collector, Harbour au Bouche; Hugh R. McAdam, postmaster, Arisaig; Thomas J. Sears, postmaster, Lochaber, Charles L. Gass, postmaster, Bayfield; and Joseph P. Benoit, postmaster, Pomquet; also the expenses in detail, of and incidental to the investigation by said Commissioner Duchemin of the charges made against John J. McDonald, postmaster, McArra's Brook; Archibald Stewart, section foreman, Harbour au Bouche; Ronald McFarlane, section foreman, Williams Point; Henry Williams, sectionman, Marshy Hope; and John W. McInnes, bridge foreman Intercolonial Railway, Antigonish. Presented 26th March, 1913.—*Mr. Chisholm (Antigonish)*.....*Not printed.*

175a. Return to an Order of the House of the 28th April, 1913, for a return showing the date of the appointment of H. P. Duchemin, Investigating Commissioner for Eastern Nova Scotia; the number of days he has been employed by the government since the appointment; the gross amount paid to Mr. Duchemin as an allowance for his services, excluding travelling expenses or other outlay; the amount which has been paid to Mr. Duchemin to date for travelling expenses, living expenses, witness fees, and other sundry expenses, respectively. Presented 21st May, 1913.—*Mr. Sinclair.*
Not printed.

176. Return to an Order of the House of the 4th December, 1912, for a copy of the report or reports made by C. E. Taché, resident engineer of Bonaventure County, Quebec, on public works existing or asked for in that constituency since October, 1911, up to date. Presented 28th March, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

177. Return to an Order of the House of the 6th February, 1913, for a return showing what properties within the area north of Wellington street and west of Bank street, in the City of Ottawa, have been purchased or acquired by the Government; from whom the said purchases were made, and the price paid, or agreed to be paid, in each case; the

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number of said properties not yet paid for, the names of the owners thereof, and amount, if any, in dispute in each case; the names of the persons who were employed in any capacity, or for any purpose, in connection with the purchase of the said properties, and the terms of their employment; the amount which has been paid to each, and further amounts to be paid to such persons, giving their respective names; whether the Government has employed any persons or agents to collect rent from the tenants or occupants of any of the said properties, if so, the names of such rent collectors, for what period employed, and amount by way of salary, fees, or commission, paid to each; the total amount paid by the Government up to 31st January, 1913, in connection with the purchase or acquisition of the said properties. Presented 28th March, 1913.—*Mr. Murphy* .....*Not printed.*

178. Return to an Order of the House of the 24th January, 1913, for a copy of all correspondence between the Minister of Public Works and H. Morel, M.P.P., for East Nipissing, in any way relating to the construction of a road or highway from North Bay to Sturgeon Falls, Ontario; and of all petitions, correspondence, surveys, and engineers' reports in any way connected with the building of the said road or highway. Presented 28th March, 1913.—*Mr. Murphy*.....*Not printed.*

179. Return to an Order of the House of the 4th December, 1912, for a copy of all pay-lists, letters, documents, telegrams and other papers in connection with the expenditures made on Brulé wharf in the County of Colchester during the last two years. Presented 28th March, 1913.—*Mr. Macdonald*.....*Not printed.*

179*a*. Return to an Order of the House of the 10th December, 1912, for a copy of all papers, documents, tenders and correspondence relating in any way to the construction of a wharf at Kraut Point, Lunenburg County, N.S. Presented 28th March, 1913.—*Mr. Maclean (Halifax)*..... .....*Not printed.*

180. Return to an Order of the House of the 29th January, 1913, for a copy of all correspondence, papers, &c., concerning the application made by the Eastern Canada Power Company, with a view to raise the head of the River St. Lawrence in the vicinity of Coteau, Cedar, Split Rock and Cascade rapids to the level of the water in Lake St. François. Presented 28th March, 1913.—*Mr. Lemieux*.....*Not printed.*

181. Return to an Order of the House of the 4th December, 1912, for a copy of all correspondence, letters and telegrams addressed by the Conservative candidate in the County of Gloucester at the election of 21st September, 1911, to the Minister of Public Works from the day he took his oath of office, on 10th October, 1911, up to the 31st December, of the same year, on the subject of public works then under construction in the said county. Presented 28th March, 1913.—*Mr. Turgeon*.....*Not printed.*

182. Return to an Order of the House of the 10th March, 1913, for a return showing the number of men of the R. C. regiment at Aldershot, during the summer of 1912, previous to the regular militia camp; date of going into camp; number there during said time; whether tenders for supplies for these men were called for; number of tenders received and from whom; if any contracts were awarded on said tenders and, if not, what was done with the said tenders; how and from whom were supplies for these men obtained; the prices paid during said time per pound respectively, for meat, sugar, butter, tea, coffee bacon, bread, and how much per bushel for vegetables; the cost per ration for supplies for said men of the R. C. regiment at Aldershot camp during the time aforesaid; the cost per ration for supplies to the regular militia camp under contract during the annual drill in the fall of 1912. Presented 28th March, 1913.—*Mr. Kyte*.....*Not printed.*

CONTENTS OF VOLUME 28.—*Continued.*

183. Report on wholesale prices in Canada, 1912, by R. H. Coats, B.A., F.S.S., editor of the *Labour Gazette*. Presented by Hon. Mr. Crothers, 28th March, 1913....*Not printed.*

184. Area of territories added to Ontario and Quebec, by Statutes of 1912.—(*Senate*). *Not printed.*

185. Relating to recent increase in prices charged Canadian fishermen for manilla cord.—(*Senate*).....*Not printed.*

186. Report of the Pilotage Commission of Quebec. Presented by Hon. Mr. Hazen, 28th March, 1913.....*Not printed.*

187. Return to an Order of the House of the 26th February, 1913, for a copy of all memoranda, letters, papers, telegrams and other documents in the possession of the Department of the Interior relating to the S. W. 36-16-27, W. 2. Presented 31st March, 1913. —*Mr. Knowles*.....*Not printed.*

187*a*. Return to an Order of the House of the 3rd March, 1913, for a copy of all correspondence, telegrams and other papers in connection with the southwest ¼ of 4-9-14 west of 2nd meridian. Presented 10th April, 1913.—*Mr. Bradbury*.....*Not printed.*

187*b*. Return to an Order of the House of the 26th March, 1913, for a copy of all papers, letters, memoranda and other documents relating to the northwest of 30-25-7-2. Presented 25th April, 1913.—*Mr. Oliver*.....*Not printed.*

187*c*. Return to an Order of the House of the 3rd March, 1913,—1. For a copy of all correspondence and other papers in connection with the disposal of the following lands and the claim of James W. Brown in connection with these lands:—

Part of S.E. ¼ section 21-20-21-W. 2nd meridian, area 5/100ths acre.
Part of N.E. ¼ section 21-20-21-W. 2nd meridian, area 116/100ths acre
Part of S.E. ¼ section 20-20-21-W. 2nd meridian, area 80 acres.
Part of S.W. ¼ section 28-20-21-W. 2nd meridian, area 72 4/100ths acres.
Whole of S.E. ¼ section 28-20-21-W. 2nd meridian, area 160 acres.
Whole of N.E. ¼ section 32-20-21-W. 2nd meridian, area 160 acres.
Part of S.E. ¼ section 32-20-21-W. 2nd meridian, area 80 acres.
Whole of N.W. ¼ section 5-21-21-W. 2nd meridian, area 160 acres.
Whole of S.E. ¼ section 5-21-21-W. 2nd meridian, area 160 acres.
Part of N.E. ¼ section 5-21-21-W. 2nd meridian, area 123 85/100ths acres.
Whole of S.W. ¼ section 5-21-21-W. 2nd meridian, area 160 acres.

2. Also of all papers in connection with the disposal of the whole of the northwest quarter-section 22-20-21, west of the second meridian; and part of S.W. ¼, 2-20-21-W. of the second meridian; and of all correspondence and papers in connection with Alexander Hurst Brown's claim *re* these lands. Presented 39th April, 1913.—*Mr. Bradbury*.....*Not printed.*

187*d*. Return to an Order of the House of the 9th April, 1913, for a copy of all letters, papers, telegrams and other documents in connection with the sale of the N.W. quarter-section 29 10-18-W. Presented 13th May, 1913.—*Mr. Turriff*.....*Not printed.*

187*e*. Return to an Order of the House of the 28th April, 1913, for a copy of all letters, memoranda and other documents relating to the northeast quarter of 14-75-15-5, during the years 1911, 1912, and 1913 to date. Presented 13th May, 1913.—*Mr. Oliver*. *Not printed.*

CONTENTS OF VOLUME 28.—*Continued.*

187*f*. Return to an Order of the House of the 31st March, 1913, for a copy of all papers, telegrams, applications, and other documents in connection with the S.W. 2-19-20, west 2nd M. Homestead, patented 3rd June, 1892; the S. ½ of N.E. 20-20-21, west 2nd M. patented 11th October, 1901, N.W.H.B., as assignee of Edward Boucher; the S.E. ¼ of 22-20-21, west 2nd M., N.W.H.B., patented 22nd September, 1900, as assignee of Louis McGillies; the S.E. ¼ of 28-20 21, west 2nd M., N.W.H.B., patented 26th August, 1901, as assignee of J. Bte. Fagant, jr., and the E. ½ of S.E. ¼ of 32-20-21, west 2nd M., N.W.H.B., patented 11th September, 1901, as assignee of Jos. Alexander; and of all papers in connection with any claims of G. W. Brown or others in connection with these lands. Presented 3rd June, 1913.—*Mr. Bradbury*.....*Not printed.*

187*g*. Return to an Order of the House of the 31st March, 1913, for a copy of all papers, telegrams, applications and other documents regarding the S.W. ¼, 28-20-21, west 2nd M., N.W.H.B., patented 1st March, 1909, as assignee of Norbert Bellehumeur; and the W. ½ of S.E. ¼, 32, 20, 21, west 2nd M., N.W.H.B., patented 1st March, 1909, as assignee of Norbert Bellehumeur; and of all papers in connection with any claims by Norman McKenzie or others against the Government in connection with these lands. Presented 4th June, 1913.—*Mr. Bradbury*.....*Not printed.*

188. Return to an Order of the House of the 10th March, 1913, for a copy of all correspondence or communication of any kind between the Department of Insurance at Ottawa and the Department of Insurance at Toronto since June, 1907, touching the transfer of the Canadian Guardian Life Insurance Company from the jurisdiction of the Insurance Department at Ottawa to that of the jurisdiction of the Insurance Department at Toronto; of all correspondence, if any, between the Insurance Department at Ottawa and the *Saturday Night*, newspaper of Toronto, touching the affairs of the Canadian Guardian Life Insurance Company or the International Insurance Company, Limited; and of all correspondence and other communications between the Department of Insurance at Ottawa and the Government of the province of Alberta in reference to the affairs of the Canadian Guardian Life Insurance Company or the International Insurance Company, Limited. Presented 31st March, 1913.—*Mr. German.*
Not printed.

189. Copy of an Order in Council, &c., respecting a contribution of $30,000 to assist in alleviating the distress of the sufferers by the disastrous cyclone which swept over the City of Regina and its vicinity. Presented by Hon. Mr. White, 31st March, 1913.
Not printed.

190. Copy of correspondence respecting the Treaty of Commerce and Navigation between the United Kingdom and Japan. Presented by Hon. Mr. Borden, 1st April, 1913.
Printed for sessional papers only.

190*a*. From Imperial Consulate General of Japan for the Dominion of Canada. The undersigned, His Imperial Majesty's Consul General at Ottawa, duly authorized by His Government, has the honour to declare that the Imperial Japanese Government are fully prepared to maintain with equal effectiveness the limitation and control which they have since 1908 exercised in the regulation of emigration from Japan to Canada. 11th April, 1913. Presented by Hon. Mr. Borden, 11th April, 1913.....*Not printed.*

191. Copy of the order in council in connection with the appointment of a Commission to inquire into the claims of the province of British Columbia for exceptional treatment. Presented by Hon. Mr. Borden, 1st April, 1913.....*Printed for sessional papers only.*

191*a*. Memorandum *re* British Columbia's claims for special consideration. Presented by Hon. Mr. Borden, 1st April, 1913.....*Printed for sessional papers only.*

CONTENTS OF VOLUME 28.—*Continued.*

191*b*. Copies of orders in council, &c., relating to the appointment of commissioners to adjust all matters relating to Indian lands and Indian affairs generally in the province of British Columbia. Presented by Hon. Mr. Borden, 17th April, 1913.
Not printed.

191*c*. Report of the Royal Commission appointed to inquire into and report upon the law respecting pilotage and its administration in the pilotage districts of Montreal and Quebec; and what changes, if any, are desirable therein; and also, a letter addressed to the Minister of Marine and Fisheries from Mr. Ajutor Lachance, one of the commissioners. Presented by Hon. Mr. Hazen, 18th April, 1913.....*Not printed.*

191*d*. Report of Royal Commission on Industrial Training and Technical Education, Parts I, II, III. and IV. Presented by Hon. Mr. Crothers, 4th June, 1913.
Printed for distribution and sessional papers.

192. Return to an Order of the House of the 24th February, 1913, for a copy of all memoranda, letters, papers and documents relating to the setting apart of a forest reserve on the north side of the Saskatchewan river opposite the City of Prince Albert. Presented 2nd April, 1913.—*Mr. Oliver*.....*Not printed.*

192*a*. Return to an Order of the House of the 26th February, 1913, for a copy of all memoranda, reports, letters, and other documents of any kind in the possession of the Department of the Interior relating to the suitability for forest reserve or for homesteading purposes, of the whole or any part of townships 24 and 25, range 27, west of the first meridian, now forming part of the Riding Mountain Forest Reserve. Presented 11th April, 1913.—*Mr. Oliver*.....*Not printed.*

193. Return to an Order of the House of the 10th February, 1913, for a copy of all correspondence exchanged between the Department of Marine and Fisheries and the member for Temiscouata, and all other persons, respecting the placing of a light or line of lights on wharf at Ile Verte, County of Temiscouata. Presented 4th April, 1913.—*Mr. Paquet*.....*Not printed.*

194. Copy of a report of the Committee of the Privy Council, approved by His Excellency the Administrator, on the 5th April, 1913, relative to a contract for an ocean mail, passenger and freight steamship service between Canada and Great Britain and Great Britain and Canada, together with the articles of agreement for the said service. Presented by Hon. Mr. Pelletier, 7th April, 1913.....*Not printed.*

195. Return to an Order of the House of the 10th March, 1913, for a statement showing the total volume of trade, in import and export, respectively, between Canada and Newfoundland for each year during the period from the 1st day of January, 1896, to the 1st day of January, 1913, and of what the said trade consisted of each year.

2. The volume of trade between Newfoundland and the West Indian Islands, included in the West Indian trade agreement with Canada, dated the 9th day of April, 1912, during the years 1909, 1910, 1911 and 1912, in import and export, and of what the said import and export consisted of each year. Presented 10th April, 1913.—*Mr. McKenzie.*
Not printed.

195*a*. Supplementary return to an Order of the House of the 10th March, 1913, for a statement showing the total volume of trade, in import and export, respectively, between Canada and Newfoundland for each year during the period from the 1st day of January, 1896, to the 1st day of January, 1913, and of what the said trade consisted of each year.

CONTENTS OF VOLUME 28.—*Continued.*

2. The volume of trade between Newfoundland and the West Indian Islands included in the West Indian trade agreement with Canada, dated the 9th day of April, 1912, during the years 1909, 1910 1911 and 1912, in import and export, and of what the said import and export consisted of each year. Presented 21st April, 1913.—*Mr. McKenzie* ....*Not printed.*

196. Return to an Order of the House of the 9th December, 1912, for a copy of all letters, telegrams, and correspondence referring in any way to the purchase or leasing of the property in Antigonish, N.S., now in use as a gun shed or store house for the equipment of the 18th Field Battery of Artillery. Presented 14th April, 1913.—*Mr. Chisholm (Antigonish)*..... .....*Not printed.*

197. Return to an Order of the House of the 19th March, 1913, for a copy of all tenders asking for the construction of a drill hall at Fernie, B.C., of all correspondence concerning the awarding of the contract, and of all correspondence and documents regarding said tender and contract. Presented 14th April, 1913.—*Sir Wilfrid Laurier.* *Not printed.*

197*a*. Supplementary return to an Order of the House of the 19th March, 1913, for a copy of all tenders asking for the construction of a drill hall at Fernie, B.C., of all correspondence concerning the awarding of the contract, and of all correspondence and documents regarding said tender and contract. Presented 6th June, 1913.—*Sir Wilfrid Laurier*..... ....*Not printed.*

198. Return to an Order of the House of the 24th February, 1913, for a copy of all correspondence and documents between the government of Canada or any officer thereof, and one Miss Mastin, of England, relating to a presentation of certain chinaware and other curiosities, made to the Government by the said Miss Mastin, in memory of the defeat at the polls of the agreement relating to reciprocity with the United States. Presented 14th April, 1913.—*Mr. Sinclair*.....*Not printed.*

199. Return to an Order of the House of the 19th March, 1913, for a return showing the names, professions or occupations, residences, the date of appointment, and the salary in each case, of all correspondents of the *Labour Gazette*, and also the number of changes made in that particular for the year 1912. Presented 22nd April, 1913.—*Mr. Verville* ....*Not printed.*

200. Return to an Order of the House of the 28th March, 1913, for a return showing the amount of seed grain supplied to settlers in Peace River during the year 1912; the amount of seed grain being provided for settlers in Peace River during 1913; who distributed the seed grain supplied in 1912 and who is authorized to distribute seed grain in 1913; under what conditions seed grain was supplied during 1912, and those proposed for 1913; if provisions were supplied during 1912, what the conditions were and who gave out the supplies; if it is intended to supply provisions in 1913, what conditions will be given and who will give them out. Presented 25th April, 1913.—*Mr. Oliver* ....*Not printed.*

201. Return to an Order of the House of the 7th April, 1913, for a copy of all documents in the Department of the Interior prior to the issue of the Crown patents relating to Lot No. 217 of the Hudson Bay Company Survey, in the parish of St. John, Winnipeg. Presented 25th April, 1913.—*Mr. Proulx*.....*Not printed.*

202. Return to an Order of the House of the 31st March, 1913, for a copy of all correspondence claims and reports with reference to compensation claimed by owners of horses attached to the 10th Field Battery at Camp Petawawa in the summer of 1912, by rea-

CONTENTS OF VOLUME 28.—*Continued.*

son of damage or disease contracted while in the service; also of all such claims paid, the amounts in each case, and the persons to whom paid. Presented 25th April, 1913.—*Mr. Carvell*.....*Not printed*

203. Return to an Order of the House of the 11th December, 1912, for a copy of all papers, documents, pay-rolls, accounts, receipts, and correspondence in connection with all expenditures of money made in 1912 upon the Petite Rivière breakwater, Lunenburg County, Nova Scotia. Presented 29th April, 1913.—*Mr. Maclean (Halifax)*.
Not printed.

203a. Return to an Address to His Royal Highness the Governor General of the 9th December, 1912, for a copy of all advertisements, tenders, contracts, orders in council, letters, correspondence, &c., relating to the construction of a wharf or breakwater at Seaforth, Halifax County, N.S. Presented 29th April, 1913.—*Mr. Maclean (Halifax)*.
Not printed.

203b. Return to an Order of the House of the 20th March, 1912, for a copy of all documents, letters, correspondence, petitions, reports, &c., addressed to the Department of Public Works since the 21st September last on the subject of a wharf now under construction at St. Croix, in the County of Lotbinière, province of Quebec. Presented 29th April, 1913.—*Mr. Fortier*.....*Not printed.*

203c. Return to an Order of the House of the 19th March, 1913, for a return showing whether the repairs to Red Point wharf, Lot 48, Prince Edward Island, have been completed; if the work was done by tender or by day labour; if by tender, with whom the contract was made; if by day labour, the number of superintendents, inspectors, or overseers employed, their names, the number of days each did work, and the wages per day paid to each; the number of men employed, their names, the number of days each did work and the wages per day paid to each; who supplied the materials; the amount of each kind or class used, and the price paid for each kind or class; the total amount paid for materials, wages and cost of the work. Presented 2nd May, 1913.—*Mr. Hughes (Kings, P.E.I.)*.....*Not printed.*

203d. Return to an Order of the House of the 31st March, 1913, for a copy of all documents, papers, correspondence, representations, &c., relating to the purchase of land at Digby, Nova Scotia, for the purpose of a site for a public wharf. Presented 2nd May, 1913.—*Mr. Maclean (Halifax)*.....*Not printed.*

203e. Return to an Order of the House of the 19th March, 1913, for a return showing whether the repairs to Southport wharf, Lot 48, Prince Edward Island, have been completed; if the work was done by tender or by day labour; if by tender, with whom the contract was made; if by day labour, the number of superintendents, inspectors, or overseers employed, their names, the number of days each did work, and wages per day paid to each; the number of men employed, their names, the number of days each did work and the wages per day paid to each; who supplied the materials; the amount of each kind or class used and the price paid for each kind or class; the total amount paid for materials, wages and cost of the work. Presented 2nd May, 1913.—*Mr. Hughes (Kings, P.E.I.)*.....*Not printed.*

203f. Return to an Order of the House of the 11th December, 1912, for a copy of all accounts, correspondence, telegrams, complaints and other documents in possession of the Department of Public Works, in relation to the expenditure of moneys on harbour improvements at Grand Etang, during the year 1911-12. Presented 13th May, 1913.—*Mr. Chisholm (Inverness)*.. .. ..*Not printed.*

CONTENTS OF VOLUME 28.—*Continued.*

203*g*. Return to an Order of the House of the 7th April, 1913, for a copy of all documents, correspondence, &c., relating to the purchase by the Department of Public Works of a certain quantity of timber for the construction of a wharf at St. Germain de Kamouraska, the said purchase having been made, as alleged, from Murray Castonguay during the year 1912. Presented 26th May, 1913.—*Mr. Lapointe (Kamouraska).* *Not printed.*

203*h*. Return to an Order of the House of the 29th January, 1913, for a copy of all letters written to the Honourable Minister of Public Works, or to any officer of the Public Works Department, or to any member of the government since 10th October, 1911, by G. A. R. Rowlings, John S. Wells and S. R. Griffin, relating to the construction of public works, County of Guysborough, N.S., also a copy of the replies to the same. Presented 29th May, 1913.—*Mr. Sinclair*.....*Not printed.*

203*i*. Return to an Order of the House of the 7th May, 1913, for a copy of all correspondence exchanged between the Postmaster General and M. Isidore Belleau, of Quebec, in connection with improvements contemplated in Quebec harbour. Presented 2nd June, 1913.—*Mr. Carvell*.....*Not printed.*

203*j*. Return to an Order of the House of the 28th April, 1913, for a copy of all papers, documents, pay-rolls, receipts, accounts, correspondence, &c., relating to repairs made upon the breakwater at Petite Rivière, Lunenburg County, N.S., in the year 1912. Presented 6th June, 1913.—*Mr. Maclean (Halifax)*.....*Not printed.*

204. Return to an Order of the House of the 4th March, 1912.—1. For a copy of all reports of engineers from 1874 to 1900, relating to the most suitable site in the harbour of Quebec for the construction of a dry dock.

2. Of all correspondence exchanged on the subject of a choice of a site for the dry dock now existing at St. Joseph de Lévis, at the time of its construction.

3. Of engineers reports, plans, maps and bearings relating to the construction of a new dry dock in the port of Quebec since 1900.

4. Of all correspondence exchanged between the different companies and the government relating to the construction of a new dry dock in the port of Quebec, since 1909.

5. Also for the production of all documents submitted by the different companies who have asked for the government grant provided by the Dry Dock Subsidies Act. Presented 29th April, 1913.—*Mr. Béland*.....*Not printed.*

204*a*. Dry dock of Lévis. Report of Mr. Charles Smith against Sampson, et al.—*(Senate).* *Not printed.*

204*b*. Return to an Address to His Royal Highness the Governor General of the 19th March, 1913, for a copy of all orders in council, plans and estimates, correspondence, papers and inquiries respecting the construction of a dry dock at Quebec or Lévis or in the port or harbour of Quebec. Presented 6th June, 1913.—*Mr. Lachance*....*Not printed.*

205. Return to an Order of the House of the 9th April, 1913, for a copy of the petition of the Restigouche Fishermen's Association to the Minister of Marine and Fisheries asking for the removal of Mr. M. M. Mowat, head guardian of the Restigouche Riparian Association as Dominion fishery officer, and the answer thereto. Presented 2nd May, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

206. Return to an Order of the House of the 13th February, 1913, for a return showing the name of the company who has the contract for the electric lighting of the government buildings and grounds in Ottawa, date of contract and period, on what notice can contract be cancelled, price paid per kilowatt hour for electric lighting, names of

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buildings lighted, cost of lighting each per year, rate for electric lighting if a combined power and light rate, price for current for power purposes, if lamps are not free, price paid for the carbon and tungsten lamps renewed, are lamps marked so as to be identified as belonging to the government buildings, number of electric lamp renewals paid for during the last fiscal year, where required, number of carbon and tungsten lamps respectively in use in the several buildings and the candle power or wattage of the same. Presented 2nd May, 1913.—*Mr. Wilson* (*Wentworth*)
Not printed.

207. Return to an Order of the House of the 17th February, 1913, for a copy of all correspondence, letters, telegrams, petitions, memoranda, reports, tenders, deposits, recommendations and all other documents of any nature whatsoever bearing on or having relation to the erection of a public building in the city of Three Rivers, P.Q., since the 11th day of October, 1911, to date. Presented 2nd May, 1913.—*Mr. Bureau.*
Not printed.

207*a*. Return to an Order of the House of the 26th May, 1913, for a copy of all papers, letters, and documents relating to the construction of a public building in the town of Lauventides, County of L'Assomption. Presented 4th June, 1913.—*Mr. Seguin.*
Not printed.

207*b*. Return to an Order of the House of the 2nd April, 1913, for a copy of all correspondence, letters, telegrams, contracts, tenders and reports of government inspector, in relation to the work and repairs on the public building at North Sydney during the year 1912, and particularly the inspector's report on the damages caused by fire during the construction of said works and repairs; and also a copy of the tenders of Henry Lovell, for the above work. Presented 6th June, 1913.—*Mr. McKenzie.*
Not printed.

207*c*. Return to an Order of the House of the 27th January, 1913, for a copy of all telegrams, letters, documents and plans relative to the purchase or acquirement of land for the purpose of erecting a public building in Stellarton, Nova Scotia, in the year 1912. Presented 6th June, 1913.—*Mr. Macdonald*.....*Not printed.*

208. Return to an Order of the House of the 24th February, 1913, for a return showing the names of the buildings occupied by the Government as public offices, which are under rent, excepting the Centre, East, West and Langevin Blocks; the street on which each of these offices is situated and the number of the street in each case. Presented 2nd May, 1913.—*Mr. Boulay*.....*Not printed.*

209. Return to an Order of the House of the 11th December, 1912, for a copy of all accounts, correspondence, telegrams, complaints and other documents in possession of the Department of Public Works, relating to the construction of telegraph lines during the year 1911-12, from South West Margaree to Scotsville, from Scotsville to North Ainslee; from Scotsville to South Lake Ainslee and Whycocomagh; from Little Narrows to Whycocomagh; from Rossville to Big Intervale and from Rossville to the Victoria County Boundary Line, all in the County of Inverness. Presented 2nd May, 1913.—*Mr. Chisholm* (*Inverness*).....*Not printed.*

210. Correspondence in connection with the area or areas prescribed for mange in British Columbia.—(*Senate*).... ....*Not printed.*

211. Report made by the Central Railway of Canada to the Railway Department.—(*Senate*).
Not printed.

CONTENTS OF VOLUME 28.—*Continued.*

212. Return to an Address to His Royal Highness the Governor General of the 10th February, 1913, for a copy of all orders in council, letters, telegrams and of all other official documents of any kind in the possession of the Department of Customs, relating to the seizures of twenty horses from John Gobel, for smuggling them across the United States boundary near Coutts, or Writing-on-Stone, between the 20th and 28th of February, 1911. Presented 5th May, 1913.—*Mr. MacNutt*.....*Not printed.*

213. Return to an Address to His Royal Highness the Governor General of the 10th February, 1913, for a copy of all orders in council, letters, telegrams and of all other official documents of any kind in the possession of the Department of the Interior, relating to sale of school lands which have been held in the provinces of Alberta and Saskatchewan since the 12th day of October, 1911. Presented 7th May, 1913.—*Mr. McCraney*.....*Not printed.*

213*a*. Return to an Order of the House of the 2nd April, 1913, for a return showing by quarter-section, or fraction of quarter-section, all school lands sold in Manitoba, Saskatchewan and Alberta during the calendar year 1912; the price per acre at which each separate parcel was sold; the name and address of each purchaser; a list of all school lands sold at above sales which have since been cancelled; the price at which each parcel of said cancelled lands were sold, with the names and addresses of purchasers of each parcel of said lands sold and subsequently cancelled. Presented 23rd May, 1913.—*Mr. Turriff*.....*Not printed.*

213*b*. Return to an Order of the House of the 12th February, 1913, for a return showing all school lands sold in the province of Saskatchewan in 1912, giving each parcel of land sold, the name and address of each purchaser, the date and place of sale, the name of the auctioneer at each sale, and any assignments of contracts of purchase of which the government has notice, and a copy of all correspondence passing between the Government, or any member thereof, and the Government of the province of Saskatchewan or any member thereof, with respect to the sale of school lands in the said province. Presented 6th June, 1913.—*Mr. Martin (Regina)*.....*Not printed.*

214. Return to an Order of the House of the 9th April, 1913, for a copy of all petitions, affidavits, specifications, plans, drawings, claims, certificates, papers and patent rights in the Department of Agriculture or the Patents Branch thereof, with respect to Patent Number 142823. Presented 7th May, 1913.—*Mr. Carvell*.....*Not printed.*

215. Return to an Order of the House of the 28th April, 1913, for a copy of all memorials, petitions, and letters, addressed to or sent by the Minister of Agriculture, or on his behalf, in connection with the establishment of an agricultural school, model farm or demonstration station at New Carlisle, Quebec. Presented 9th May, 1913.—*Mr. Marcil (Bonaventure)*.....*Not printed.*

216. Return to an Order of the House of the 28th April, 1913, for a copy of all telegrams, correspondence, returns, &c., between the Department of Agriculture, and any other person or persons, requesting recently that the Veterinary Director General of Canada visit Nova Scotia. Presented 9th May, 1913.—*Mr. Maclean (Halifax)*.

Not printed.

217. Extent to which the Franking privilege is used by the several provinces in Canada for statistics.—(*Senate*).....*Not printed.*

218. Return to an Order of the House of the 29th January, 1913, for a copy of all diaries and other documents relating to and showing the work performed during the months of June and July, 1912, by Homestead Inspectors Rathwell and Erratt in the Moosejaw land district. Presented 16th May, 1913.—*Mr. Knowles*.....*Not printed.*

CONTENTS OF VOLUME 28.—*Continued.*

218a. Return to an Order of the House of the 29th January, 1913, for a copy of all diaries relating to and showing the work performed during the months of June and July, 1912, by Homestead Inspectors Brandt, Balfour, Ouelette and Sipes, in the Regina land district. Presented 16th May, 1913.—*Mr. Martin (Regina).....Not printed.*

218b. Return to an Order of the House of the 29th January, 1913, for a return showing the expenses of Homestead Inspectors Brandt, Balfour, Ouelette and Sipes during the months of June and July, 1912. Presented 16th May, 1913.—*Mr. Martin (Regina).* *Not printed.*

218c. Return to an Order of the House of the 29th January, 1913, for a return showing the expenses of Homestead Inspector Miller of the Moosejaw land district during the months of June and July, 1912, together with a copy of all reports, proceedings, diaries and other documents, showing the work performed during the said time by the said homestead inspector. Presented 16th May, 1913.—*Mr. Knowles.....Not printed.*

218d. Return to an Order of the House of the 29th January, 1913, for a copy of all diaries and other documents relating to and showing the work performed during the months of June and July, 1912, by Homestead Inspectors Shields and McLaren, in the Swift Current lands district. Presented 23rd May, 1913.—*Mr. Knowles.....Not printed.*

218e. Return to an Order of the House of the 29th January, 1913, for a return showing the expenses of Homestead Inspectors Shields, McLaren, Erratt and Rathwell, during the months of June and July of 1912. Presented 26th May, 1913.—*Mr. Knowles.* *Not printed.*

219. Return to an Order of the House of the 26th March, 1913, for a copy of all papers, memoranda, and instructions relating to a certain area of land on the bank of Little Manitou Lake, Saskatchewan, recently transferred to the town of Waterous, for park purposes. Presented 16th May, 1913.—*Mr. Oliver.....Not printed.*

220. Return to an Order of the House, of the 4th December, 1912, for a copy of all correspondence and other documents in the possession of the Department of Public Works relating to the proposed interprovincial bridge between Hawkesbury, Ontario, and Grenville, Quebec. Presented 26th May, 1913.—*Mr. Proulx.....Not printed.*

221. Return to an Order of the House of the 1st April, 1913, for a copy of all complaints, charges, evidence and reports in connection with the investigation held at Aldershot, N.S., in September, 1912, relating to the alleged thefts of property from the militia camp. Presented 26th May, 1913.—*Mr. Kyte.....Not printed.*

221a. Return to an Order of the House of the 21st April, 1913, for a copy of all notices, tenders, contracts and correspondence relating to the supplying of ice for the military comp at Aldershot, N.S., for 1913, and of all correspondence relating to the source of such ice supply. Presented 26th May, 1913.—*Mr. Kyte.....Not printed.*

222. Return to an Order of the House of the 17th February, 1913, for a copy of all letters, proposals, tenders, memoranda, papers and documents in the possession of the Department of Trade and Commerce, or any department of the Government, bearing date since 1st December, 1912, relating to steamship service between Canada and the West Indies. Presented 27th May, 1913.—*Mr. Maclean (Halifax).....Not printed.*

222a. Return to an Order of the House of the 2nd April, 1913, for a copy of all correspondence, petitions, letters, telegrams, and other documents in the Department of Trade and Commerce, or any department of the Government, relating to the SS. service,

CONTENTS OF VOLUME 28.—*Continued.*

between Mulgrave, County of Guysborough and Cheticamp, Inverness County, during the years 1910-11, 1911-12, and 1912-13, and the service to be continued during the year 1913-14. Presented 27th May, 1913.—*Mr. Chisholm (Inverness)*.....*Not printed.*

223. Return to an Order of the Senate calling upon the Clerk of the House to furnish a statement showing the number of Bills passed by the House of Commons since Confederation, which have been:—1. Amended by the Senate. 2. Rejected by the Senate. 3. Amended by the Senate and accepted by the Commons.—*(Senate)*.....*Not printed.*

224. Return to an Order of the House of the 14th May, 1913, showing whether a contract was passed by the Post Office Department in the year 1911, for the use of stamp vending machines, the terms of said contract, the date, and by whom signed. Presented 2nd June, 1913.—*Mr. Lemieux*.....*Not printed.*

225. Ordinances of the Yukon Territory, passed by the Yukon Council in the year 1913. Presented by Hon. Mr. Coderre, 2nd June, 1913.....*Not printed.*

226. Names of judges of Superior and Circuit Court in province of Quebec, date of appointment, &c.—*(Senate)*.....*Not printed.*

227. Return to an Order of the House of the 19th May, 1913, for a return showing the per capita taxation for the year ending 31st March, 1913, and for each of the twelve preceding years. Presented 3rd June, 1913—*Mr. Hughes (Kings, P.E.I.)*....*Not printed.*

228. Return to an Order of the House of the 29th May, 1913, for a return showing whether a certificate has been issued by the Treasury Board authorizing the transfer of the assets and liabilities of La Banque Internationale du Canada to the Home Bank; the terms of the said transfer, and all documents bearing on this question. Presented 3rd June, 1913.—*Mr. Lemieux*.....*Not printed.*

229. Report of the Canadian delegates to the International Conference, held at New York for the consideration of the Commemoration of the First Century of Peace between the United States and the British Empire. Presented by Hon. Mr. Borden, 5th June, 1913.....*Not printed.*

230. Return to an Address to His Royal Highness the Governor General of the 10th March, 1913, for a copy of all correspondence, memoranda, orders in council, departmental orders and reports from fishery overseers or other officers, during the past two years, relating to weir licenses in the waters of the Counties of Charlotte and St. John, Province of New Brunswick. Presented 6th June, 1913.—*Mr. Pugsley*.....*Not printed.*

231. Return to an Order of the House of the 24th February, 1913, for a copy of all letters and papers relating to the issue of half-breed scrip, warrant No. 2155, certificate No. 672, to Albert St. Denis, and the disposition of the said scrip. Presented 6th June, 1913.—*Mr. Oliver*.....*Not printed.*

232. Return to an Address to His Royal Highness the Governor General of the 3rd February, 1913, for a copy of all papers in connection with the withdrawal from settlement of a strip of land one mile in width along the line of the Hudson Bay Railway, and of the order in council, and also of all plans and correspondence in connection with the same, prior and subsequent thereto. Presented 6th June, 1913.—*Mr. Graham.* *Not printed.*

233. A return to an Order of the Senate dated 7th March, 1913, for a copy of all papers, letters, petitions, contracts and other papers relating in any way to the purchase of land at Le Pas for terminus of Hudson Bay road.—*(Senate)*.....*Not printed.*

REPORT OF ROYAL COMMISSION

TO ENQUIRE INTO

ALLEGED COMPLAINTS RELATING TO WEIGHING OF BUTTER AND CHEESE IN MONTREAL

PRINTED BY ORDER OF PARLIAMENT

OTTAWA
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1913

[No. 153b—1813.]

REPORT OF ROYAL COMMISSION RE BUTTER AND CHEESE

The Honourable Martin Burrell,
Minister of Agriculture,
Ottawa, Ont.

The undersigned having been under authority of Royal Commissions, dated respectively the 19th day of July, 1912, and the 5th day of August, 1912, appointed Commissioners to inquire into the complaints received by the Department of Agriculture from producers and vendors of butter and cheese in eastern Ontario and the western portion of Quebec, as to alleged unfairness in the methods of weighing butter and cheese in Montreal, and also to inquire into the complaints made by representative farmers as shown by documents on file in the Department of Agriculture, as to present methods of payment for butter and cheese in Montreal, have the honour to hand you for the information of His Royal Highness the Governor General, this their report upon the result of such investigation, the conclusions arrived at and their recommendations in connection therewith, together with a copy of the evidence taken in the course of such investigation, as all required under the terms of the said Commission.

HISTORY OF COMPLAINTS.

In dealing with the above matters your Commissioners deemed it advisable in the first place to ascertain the exact nature of the complaints made by the producers and vendors in regard to the weighing of cheese and the method of payment, and with that end in view they obtained access to the very voluminous files in the Department and found that the subject of short weights had been occupying the attention of the Department for a great many years, the subject of payment only during the last two years.

In this report it would be impossible to go into any very great detail as to the complaints found on record in the office of J. A. Ruddick, Esq., Dairy and Cold Storage Commissioner, and your Commissioners consider that for present purposes it is sufficient to state that the complaints as to short weights made by producers and vendors are many, and the complaints made by buyers, particularly the purchasers of cheese in England, are also many. If we are to judge by the files, the Dairy and Cold Storage Commissioner has certainly been kept busy during the last few years in an effort to prevent gross irregularities in weighing complained of by the trade in Great Britain, and we find on many occasions in his efforts to overcome these irregularities, in the interests of the dairy industry of Canada he has had special inspectors visit the factories complained of, and we regret to state that these inspectors found that notwithstanding that the scales in many of the factories were in good order, cheese in many instances had been marked ten pounds more than actual weight.

In very many cases, however, the inspectors found that the scales at the factories were absolutely unreliable. Notwithstanding the persistent efforts of Mr. Ruddick to have all cheese weighed with precision and care so that an end would be put to the complaints from the trade in Great Britain, we regret to find that these irregularities have continued down to the present time.

We also found certain memorials from farmers associations, which no doubt are the ones referred to in the reports of the Committee of the Honourable the Privy Council, authorizing this investigation.

One memorial is addressed to the Honourable Sir Richard Cartwright, G.C.M.G., and is signed by W. A. Mullin, secretary of the committee, the committee having, as set out in said memorial, been appointed by a large representation of dairymen from all parts of eastern Ontario and western Quebec who met in the city hall, Ottawa, to discuss certain grievances in connection with the present mode of paying for cheese and butter, and who asked that the Government grant protection to butter and cheese manufacturers to the same extent as protection has been given to the growers of wheat in the province of Manitoba. Copy of this memorial is attached to this report.

Another memorial is on file in the department, signed by C. F. Rath, Chairman of Committee appointed at a delegation of farmers from eastern Ontario and western Quebec, who met in the city hall, Ottawa, on Wednesday, January 18, 1911, to discuss grievances in connection with the present system of weighing cheese in Montreal. This memorial deals at some length with the matters under discussion and claims that there is an injustice being done to the dairymen in the method of weighing cheese, and asks the government to appoint an official weigher. Copy of this memorial is also attached to this report.

We also gave consideration to the debates in the House of Commons in connection with this grievance, commencing in 1905 and ending on the 21st March, 1912, when the mattter was very prominently brought before Parliament and the country by the honourable member for Frontenac.

The statements made by the different members and by the Honourable the Minister of Agriculture in the debate of the 21st of March, 1912, were a guide to us in our efforts at a solution of the difficulties which were discussed.

The Honourable Minister of Agriculture in the debate, made among other statements, the following:—'My own feeling is that we have to work in the largest spirit for the proper development on the soundest possible basis of Canadian industry of dairying, especially in regard to its export phase,' again he says: 'in regard to the whole dairy industry the government is most anxious to forward it in every legitimate way, because we recognize that the dairy industry is one of enormous importance to the whole industrial basis of this country,' and again he says, 'anything that the Government can do to assist this great industry, the Government ought to do and will do,' and again he says, 'if a case is made out with sufficient strength for action by the government, I can promise that it will not end with a simple report, but that later on the Government will take action upon it.'

Your Commissioners also read with interest the correspondence which passed between the former Minister of Agriculture, the Honourable Sidney Fisher, and the Board of Trade, Montreal, in connection with the amendment of the rules.

We also had before us the report of W. G. Parmalee, who was appointed under authority of a Royal Commission, bearing date the 7th day of December, 1901, a Commissioner to investigate and inquire into and report upon complaints and difficulties in connection with the weighing of butter and cheese.

Mr. Parmalee's report is dated the 22nd day of October, 1903, and with some of his finding we agree.

Your Commissioners also had before them the report of the Dairy and Cold Storage Commissioner for the fiscal year ending March 31, 1912, also the rules and by-laws, &c., of the Home and Foreign Produce Exchange, the Bristol Trade Association, the Liverpool Provision Trade Association and the rules and by-laws of the different cheese boards throughout the eastern portion of the province of Ontario and the western portion of the province of Quebec.

We also considered carefully the provincial laws of the provinces in regard to the dairy interest, the laws of New Zealand, Australia, and in fact the legislation of

the empire in connection with the dairy industry, and in the course of our report we may have to refer to the Dairy Industry Act of New Zealand, and some of the Acts of the provinces of Ontario and Quebec, more particularly the Acts respecting cheese and butter exchanges.

Your Commissioners were thoroughly impressed with the great importance of the dairy industry in Canada, and of the absolute necessity that there should exist between buyer and seller, perfect confidence.

The cheese business so far as Montreal is concerned, is almost entirely an export business, the chief market being Great Britain, and in that market Canadian cheese meets with the keenest competition from other countries, notably New Zealand, consequently the success, and in fact the very existence of the trade depends on Canada being able to compete with such opposition, not only in the matter of quality and price, but also in the matter of weights, and in this connection we went most carefully into the laws as they exist in New Zealand, and into the rules in regard to shrinkage, &c.

After full consideration of all complaints we could find on the files of the Department in connection with this matter, it seemed clear to us that there were only two matters of importance to be investigated:—

1. The complaints received by the Department from producers and vendors of butter and cheese sold in the city of Montreal, weights and quality guaranteed, as to alleged unfairness of the weigher towards the producers, and as to the rules and methods followed in such weighing.

2. Complaints of farmers as shown by memorial on file in the Department of Agriculture, and by resolutions passed as to the present system of payment in Montreal.

INVESTIGATION.

Your Commissioners feeling that they had given every consideration to the complaints, &c., on file, and that they were in a position intelligently to hear what was to be said in regard to those complaints by interested parties, held sittings at Montreal, Kingston, Cornwall, Brockville and Ottawa. The first sittings were held at Montreal on the 29th day of July and the 7th day of August, 1912.

A sitting was held at Kingston on the 5th day of September, 1912, at Cornwall on the 13th of September, 1912, at Brockville on the 17th of October, 1912, at Ottawa on the 1st of November, 1912. The final sitting at which evidence was heard was held at Montreal on the 2nd, 3rd and 4th days of January, 1913. Your Commissioners have had several sittings since for the consideration of evidence, &c.

All meetings were well advertised in a paper published in the district where meetings were to be held, and also in the *Ottawa Valley Journal* and the *Central Canada Citizen*.

Notices of the meetings were also sent to the various cheese boards, and the boards of trade, &c. Some of the meetings were well attended, and others not so well attended as your Commissioners would have liked. The evidence of upwards of fifty witnesses was taken at the different sittings.

Your Commissioner also at the request of the Dairymen's Association of Eastern Ontario attended a meeting of the association held at the city of Kingston in the county of Frontenac, in the month of January, 1913, and your Commissioners had the advantage of hearing the views of those directly interested in the matters under investigation.

Other written, as well as oral information, was sought and obtained, and is embodied in the evidence herewith submitted.

It was the intention of the Commissioners to hold other meetings in the eastern part of Ontario and western part of Quebec, but upon conferring with the different organizations in these districts, it was found more advisable to extend an invitation

to representative dairymen throughout these districts, to attend the sittings held in Montreal on the 2nd, 3rd and 4th days of January, 1913, and a large number of representative dairymen were good enough to attend and give the Commissioners the benefit of their views.

The weighing of butter and cheese in Montreal is done by John McLeod and his assistants, and he is to all intents and purposes an official weigher, having been appointed by the Montreal Butter and Cheese Association in January, 1894.

The only legislation upon the subject is an Act passed in 1865.

Under this Act the Montreal Board of Trade in common with other boards of trade has power to appoint an official weigher, and to make such rules and regulations as they may deem expedient. These rules and regulations govern the weighing of butter and cheese.

Then under section 8 of the Act, every weigher, measurer and gauger appointed under this Act shall appoint one or as many more assistants as the council of the Board of Trade may from time to time direct, for the acts of which assistants he shall be responsible, and all acts done by any assistant weigher, measurer or gauger shall be held to be the acts of the weigher, measurer or gauger who appointed him.

So far as we can find Duncan Cameron was the official weigher appointed by the council of the Board of Trade, and he had a number of assistants.

Mr. McLeod appears to have been appointed deputy weigher for Montreal in May, 1878, and appears to have been sworn in as an assistant to Mr. Muirhead, Mr. Cameron's predecessor in 1878, and has acted as an independent weigher since Mr. Muirhead's death in 1882.

The fact however is, that the Montreal Produce Association has, and does recognize Mr. McLeod as an official weigher of equal authority with Mr. Cameron, and the bulk of butter and cheese is weighed by Mr. McLeod and his assistants.

The rules governing the weighing of butter and cheese were adopted by the council of the Board of Trade on July 10, 1901, and are as follows:—

1. That the weighing shall be done on a beam scale only, such scale to be submitted for inspection to the officers of the Dominion Government as frequently as the law provides for such inspection.

2. When averaging or weighing cheese an allowance of one-quarter pound per box over and above the balance of the beam must be made to ensure good weight and to cover grease, cloth, &c. Actual weights must be shown on certificates, but no gains shall be applied against losses in the average; gains of two pounds or over shall be governed by Rule 3.

3. Any difference of two pounds or over between the actual weights of butter or cheese and those marked on the packages, shall not form part of the average but all such packages shall be set aside, remarked and so recorded on the certificate. This rule shall not apply when there is a regular or uniform gain or loss of two pounds or over, in which case a certificate shall be given accordingly without reweighing the whole lot, unless either of the parties interested should request that the whole lot be reweighed.

4. All butter is to be weighed nett, that is all salt pickle, cloth, paper and package, &c., are to be removed before weighing, and upbeam only shall be considered good weight.

5. Not less than five packages of butter and cheese nor more than ten per cent of each particular lot shall be weighed, except in the case of gross discrepancies in the marked weights as referred to in Rule 3, in which case the whole parcel may be reweighed at the request of either of the parties interested, but at the expense of the party making the request.

6. The fee for weighing cheese shall be two cents per box; the fee for weighing butter shall be five cents per package, which shall include the stripping and replacing of cloths, &c.

Under section 10 of the Act, power is given to promulgate all necessary rules and regulations to be observed in carrying out the provisions of this Act.

One of the first duties which your Commissioners felt that they should undertake in connection with this investigation, was the examination of the method adopted by Mr. McLeod in connection with the weighing of cheese at Montreal, and your Commissioners spent considerable time going through the different warehouses in the city of Montreal and investigating, not only the method, but the accuracy of Mr. McLeod's weighing, and in many instances had cheese reweighed, and in all cases your Commissioners found that Mr. McLeod and his assistants exercised the greatest possible precaution.

Your Commissioners found on personal examination at the different warehouses in the city of Montreal that cheese was coming in from certain sections of both the province of Ontario and the province of Quebec, very much short in weight and green, and in many cases showing great carelessness in weighing.

They found, however, from other sections of the province of Ontario and the province of Quebec where the cheese had evidently matured, or at least had been held until they were from ten to fifteen days old, that there was very little difference in the weight marked on the boxes and the weight given by Mr. McLeod.

Your Commissioners finding that it would be impossible for them as a body to make that thorough investigation and inspection at the different factories that the Commissioners deemed it advisable to make, appointed J. N. Lemieux as official weigher for the Commission, on the 31st day of July, 1912, giving him full power to enter in and upon any cheese factory building or premises wherein any work is done in connection with the weighing of cheese and butter, in order that he might make a thorough examination of the methods for weighing cheese and butter, both at factories and at the city of Montreal, and your Commissioners gave him instructions more particularly to investigate thoroughly and be in a position to say whether:

(*a*) The scales used by Mr. McLeod are properly balanced and correct;

(*b*) To see whether Mr. McLeod and his assistants are or are not, weighing butter and cheese correctly;

(*c*) Does Mr. McLeod have his scales inspected and certified as to their correctness by the official inspector of scales;

2. To investigate and report on any complaints that are being made on any undue shrinkage or heavy average losses on any cheese or butter arriving in Montreal.

3. Do the merchants in your opinion, exercise any control over Mr. McLeod in his weighing, and is the weighing properly and carefully done, and do the farmers shipping into Montreal receive fair and honest treatment as regards the weighing of cheese and butter;

4. To ascertain whether there are any lots of cheese and butter arriving in Montreal that show gains or weigh more than the marked weights on the boxes;

5. If you are not satisfied as a result of your investigation that cheese and butter are properly weighed, or without undue influence from the merchants, have you any suggestions you can make that would bring about a more careful and accurate system of weighing;

6. The Commission desires you to make a thorough examination as to the weighing and as to the way the certificates of weights are obtained. In this connection it is advisable for you to ascertain whether the merchants can obtain blank certificates from the public weigher, Mr. McLeod, or whether all certificates are issued solely from this office;

7. In your opinion, is any injustice being done to the farmers upder the present system of weighing butter and cheese in Montreal, or as to the way the certificates as to the weights are issued by the public weigher?

To assist you in your investigation you are authorized by the Commission, if you think it advisable, to purchase a set of scales.

Mr. Lemieux made his report on the 28th of December, which report is attached to this, our report, and consequently will only be referred to by us in a brief manner.

Mr. Lemieux was assisted in his investigation at the factories and in Montreal by Mr. McDonell, one of your Commissioners. As shown by Mr. Lemieux's report the scales used by Mr. McLeod and his assistants weigh the cheese and butter correctly.

Mr. Lemieux has also found that where short weights occur, they were attributable to one of four causes:—

First.—Not well balanced, old rusty and out of order scales.

Second.—Carelessness in weighing.

Third.—Dishonest weighing or falsely marked weights on the boxes.

Fourth.—Weighing the cheese too green.

As to the first cause, not well balanced, old and rusty scales, Mr. Lemieux and Mr. McDonell found that in ninety per cent of the factories they personally examined, the scales were out of order. In some of the factories where the scales were tested, they were found to be absolutely unreliable, and the consequence was that very heavy shortages were shown.

Then again Mr. Lemieux found in many instances great carelessness in weighing, and in some instances absolute dishonest weighing, and in very many instances the cheese was shipped to Montreal practically out of the hoop.

Mr. Lemieux in his report gives a number of factories where he found they were shipping green cheese, and one factory in particular where heavy shortages had been noticed, he could find no cheese, they having all been shipped out, and the cheese-maker stated that he was just as well pleased to have heavy shortages and ship cheese green, as to have O.K. weights and ship the cheese well cured.

Mr. Lemieux reports also that on October 25th he went to a factory where he weighed five cheese which had already been weighed by the maker, these were O.K. in weight. He took two other cheese which were lying near the stove in the curing room and the first one showed a loss of one pound. After inquiring of the cheese-maker, he found that he had heated this stove the previous day, and he had weighed all his cheese on the 22nd. The cheese were shipped to Montreal on the 26th, arriving there on the 31st of October, when they were weighed by the public weigher and averaged four pounds on five, shortage.

In cases like this where cheese are weighed about ten days before arriving at its destination, Mr. Lemieux reports that they could not be expected to hold their weight. He is under the impression that there are many cases of this kind. He then gives in detail weights taken at each factory visited, which can be found in his report.

As to dishonest weighing and falsely marked weights on boxes, we regret to say that he found several lots of cheese weighing three, five and even ten pounds less than the weight marked on the boxes, and in his opinion the weight stencilled on the boxes were put there to deceive. In one particular case he states he found a lot of twenty-five boxes which were fifty-nine pounds short in weight, as follows:—Nine boxes each marked five pounds more than actual weight, one box four pounds more than actual weight, ten boxes one pound more than actual weight, and the remaining boxes were O.K.

He investigated thoroughly question (*c*), submitted to him, and finds that Mr. McLeod's scales are properly kept and in good working order, having the scales inspected by the official inspector of scales and measures in Montreal. Accompanying his report are the certificates of the official inspector of weights and measures of 1912.

During the progress of our investigation a large number of complaints were received in regard to short weights, and these complaints were thoroughly investigated and a report on each complaint is given in Mr. Lemieux's report appended hereto.

Your Commissioners found from the evidence that just the moment the cheese are removed from the press in which they are moulded, they begin to lose in weight by evaporation; that there are many factors which influence the rate of shrinkage such as the character of the cheese, the size of the cheese, climatic conditions including temperature and humidity, the condition of the boxes in which the cheese are placed, &c.

That as a fair average they will lose about one pound in the first week, one pound in the next three weeks, and very nearly a pound in the next month, under ordinary factory or transport conditions.

That where green cheese are shipped short weights are more in evidence than where cheese has been held for a period of ten or fourteen days before shipment.

Having this knowledge your Commissioners instructed Mr. Lemieux to make a large number of tests to ascertain the shrinkage of cheese from the time it left the factory until its arrival in Montreal, also the shrinkage of a cheese after it had been in cold storage at different temperatures for a certain number of days, and he has in his report given the result of his investigation and tests.

All the tests taken by Mr. Lemieux show that cheese does shrink, regardless of the temperature at which it is kept, also that if a cheese is shipped from the factory green the shrinkage is greater than in well cured cheese, even if the green cheese is kept at a lower temperature.

Your Commissioners ascertained that there was a feeling among some of the country shippers of butter and cheese that the same methods of weighing are not followed by the Montreal merchants where they buy or sell for export to the English markets, and that the merchants are reaping a profit from the shortages found when the cheese or butter is averaged by Mr. McLeod.

This is an entirely erroneous impression, as when cheese or butter is shipped within five days of its arrival in Montreal, the first average taken by Mr. McLeod is used in invoicing the butter or cheese, but if butter or cheese remains for five days in any warehouse in Montreal after its first weighing, it has to be reaveraged by the public weigher, and the same rule has to be followed as in the first instance.

The tables attached to Mr. Lemieux's report verify W. G. Parmalee's findings, that the farther the cheese is shipped the better it stands its weight in Montreal.

Mr. Lemieux was also instructed to look into the question or rather the insinuations made that the merchants have blank certificates which they issue in making settlements, and he found that there was no foundation whatever for such insinuations.

Your Commissioners received from Mr. Lemieux verbal reports from time to time, and from these reports they became convinced that the two most important reasons for short weights were, the shipment of green cheese, and the inferior scales used in a large number of the cheese factories.

Your Commissioners then examined the Weights and Measures Act, and found, that while at one time scales in cheese factories were inspected annually, that this regulation was amended in 1899, and at the present time scales in cheese factories are not liable to reverification oftener than once in two years.

The evidence given by Mr. Fuller and others who dealt with this matter, was to the effect that these scales should be inspected at least once a year, and that it would be still better if a special officer visited the factories occasionally during the season for the purpose of seeing that scales were kept in proper condition.

At the hearing held in Montreal in January, 1913, your Commissioners were fortunate enough to have Henry J. Fuller, Esq., President of the Fairbanks-Morse Company, appear before them and give an exhibition of different makes of scales.

For the purpose of this exhibition, the scales were marked 'A,' 'B' and 'C.' All had passed government inspection. Scale 'C' was a cheap scale, the selling price of which was slightly under ten dollars, and was the scale most commonly used among dairymen.

It was demonstrated beyond question that scale 'C' was a most inferior article, and in the different tests that were made, it was found that if a cheese was not placed exactly in the centre of the platform of the scale, there would be a variation in weight of, from one to three pounds, and Mr. Fuller gave it as his opinion that so long as a scale of the class of scale 'C' is used in this country, there would be errors in weights, as the scale was fundamentlly wrong.

Your Commissioners would respectfully submit that the Department of Inland Revenue should give consideration to the evidence of the President of the Canadian Fairbanks Scale Company, and endeavour to so amend the Weights and Measures Act and Regulations as to make it impossible that a scale of the class of scale 'C' could be placed on the Canadian market, and that all scales which are exposed to dirt and oil which clog its working parts, or to salt which rusts, should be inspected frequently.

That all inspectors of weights and measures should be thoroughly qualified for the duties of their position, and should not be engaged until such time as they are thoroughly instructed in the construction of scales and are familiar with the law and regulations, and we would respectfully throw out the suggestion that newly appointed assistants before being put at the actual duties of inspection, be placed in a factory where they may learn how scales are made and dissembled, and become judges of the quality and material used, and as to whether the several parts are sufficiently strong for the services that will be required of them.

It was quite apparent to your Commissioners that scale 'C' which had the stamp of government inspection upon it, was not a scale properly constructed for the purpose for which it was designed.

So impressed were your Commissioners with the evidence given by Mr. Fuller in regard to scales, and the demonstration he gave of the working of the scales, that they were very pleased indeed when it was suggested by the honourable member for Frontenac, and by the Vice-President of the Dairymen's Association of Eastern Ontario, that Mr. Fuller should attend the annual meeting of the Dairymen's Association of Eastern Ontario, at Kingston, and give them the same demonstration which he had given before the Commission.

Mr. Fuller was unable to personally attend at the convention, but one of the officers of his company attended, and we have every hope that the demonstration was an object lesson to the members of the Dairymen's Association, and that it will have the effect of encouraging cheese manufacturers to place good scales in their factories. The patrons of factories should insist upon this being done.

Your Commissioners were pleased to note from the evidence of G. A. Gillespie, President of the Dairymen's Association of Eastern Ontario, that in the Peterborough district, the scale inspector was very competent, and that he had condemned the cheap scale, the consequence being in that district, according to Mr. Gillespie's evidence, that there is not a single factory using a cheap scale, but on the contrary they are all using a first-class scale, and no complaints are heard as to shortages from that district.

Your Commissioners accepted the invitation of the Dairymen's Association of Eastern Ontario which had been kindly extended to them by the association to attend the annual meeting held at Kingston in the month of January, 1913. A very full discussion took place in regard to the matters under investigation, and your Commissioners have much pleasure in embodying in their report, certain resolutions which were passed at that meeting.

'That the thanks of this association are hereby tendered to R. A. Pringle, K.C., A. Hodgson and S. J. McDonell, as members of the Royal Commission appointed for

the investigation into the conditions prevailing in regard to the payment, weighing, &c., of cheese at Montreal, for the valuable practical information presented to this convention, as acquired by their observations in investigation as to this.'

'Moved by T. H. Thompson, seconded by Wesley Willows, That in the opinion of this association, all scales at cheese factories should be tested at least annually, and that the extra cost of the same, be borne by the government.'

'Moved by J. A. Dargavel, seconded by J. N. Stone, That this association is of the opinion that in the interest of the cheese industry of the Dominion of Canada, legislation should be passed preventing the shipment of cheese from place of production under ten days old.'

'Moved by T. A. Thompson, seconded by J. N. Stone, That in the opinion of this association, the present mode of payment for cheese is satisfactory, as the bonding of buyers might work to the injury of the producers as the cost for providing such bond is bound ultimately to be borne by the producer and it is open to each and every cheese board to amply protect themselves, as is now done by many boards.'

'Moved by J. A. Campbell, seconded by Geo. McLean, That in the opinion of this association, the appointment of a competent official at Montreal by the Dominion government to co-operate with the Ontario and Quebec Departments of Agriculture in advancing the dairy interests, is advisable.'

And the following resolutions were passed by the directors:—

'Moved by Mr. Glendinning, seconded by Mr. R. G. Leggatt, That this association recommend that the Royal Commission ask the Dominion Government to appoint an official referee to be stationed at Montreal, who shall be competent and vested with authority to decide both as to quality and weights of dairy products.'

'Moved by J. A. Campbell, seconded by Mr. Geo. McLean, That this association recommend that the Royal Commission ask the Dominion Government to enact legislation making it a punishable offence to sell cheese within ten days of the date of its manufacture.'

At the meetng held in the city of Montreal in January, 1913, the President of the Board of Trade submitted a letter from the Montreal Produce Merchants Association, dated January 3, 1913, to the Chairman and Members of the Commission on the Weighing of Butter and Cheese.

'Gentlemen,—In addition to any evidence which may be submitted by the individual members of this association, I beg to submit, on behalf of the association officially, the following statement for your consideration:—

'1. That in the consideration of the system under which cheese should be weighed it is important that it be borne in mind that the cheese business, so far as Montreal is concerned, is entirely an export business, the chief market being Great Britain, and that, in that market, Canadian cheese meets with the keenest competition from other countries, notably from New Zealand, consequently the success, and in fact the very existence of the trade, depends on Canada being able to compete with such opposition, not only in the matter of quality and price, but also in the matter of good weight, which is necessarily an important factor in determining the desirability of the goods from one country as compared with those from all others.

'2. That Canadian exporters, under the system of weighing which has been in effect for years past have suffered continually from claims for short weights, more particularly on those cheese that are weighed under the present Montreal rules, the liability of cheese to shrinkage being so well known as not to require proof on our part; indeed these claims have been more frequent during the past year or two than

usual, due to factories shipping cheese so green, thus showing that the situation is becoming more aggravated rather than improving, and the hold being secured by the New Zealand cheese shippers on the British market has already made a marked difference in the buying of Canadian cheese for winter storage.

'3. That the enclosed printed copies of cheese contract agreements (marked "A" and "B") show the practice in New Zealand, in connection with the allowance to the buyer of two and a half per cent from the official government weights for shrinkage and in connection with the restrictions as to the minimum age of cheese before shipment; in agreement "A" it is provided (section 8) that all cheese shall be of minimum age of three weeks, and in agreement "B" that all cheese shall be matured for such a period that it will have been manufactured fourteen days before packing.

'4. That the allowance of two and a half per cent in the weight for shrinkage, which has been the practice of New Zealand, coupled with the persistent shipping of green cheese from Canada, and the consequent excessive shrinkage, for which no allowance is made, is militating so seriously against the Canadian trade that a change in the Montreal weighing rules seems to this association imperative if Canada is to hold its hard-earned position in the British Market.

'5. That in view of the foregoing, this association suggests that in your report to the Government you should recommend that the rules for the weighing of cheese in Montreal should be altered, so that half a pound per box up-beam be allowed to meet the changed conditions in connection with the exporting business.

'6. That as regards the question of payment, we would point out that every added restriction in connection with the butter and cheese business will undoubtedly react on the farmers or producers of the goods, besides being a detriment to the trade generally.

'7. That the members of this association would welcome the appointment of an official referee, who, with the authority of the Government behind him, would act as arbitrator between buyer and seller, both as regards the quality and the weight of the goods.

'8. That since the rule in the Montreal weighing rules, which forbids the offsetting of gains against losses in averaging, was designed solely to secure correctness in weighing at the factories, and has seldom, if ever, been called into use, we would suggest that you recommend its elimination, particularly in view of the fact that some of the sellers are inclined to look upon it as an injustice in spite of the fact that sellers have only to weigh their cheese correctly to avoid its application.

I am, gentlemen,

Yours truly,

'J. A. GUNN,
'President.'

Your Commissioners found that the only complaint that was made in regard to the rules adopted by the Council of the Board of Trade, and which are in force, was with reference to the closing portion of Rule 2, that is, as to no gains being applied against losses in the average.

This seems to have been a contentious matter for a very long time. The former Minister of Agriculture had the matter up with the Board of Trade, and Mr. Parmelee in his report refers to this rule.

We find that in March, 1912, the secretary of the Butter and Cheese Association, wrote the secretary of the Montreal Board of Trade a letter, which is attached to this our report, and in this letter it is stated that the words, 'but no gains shall be applied against losses in the average,' be struck out.

A copy of this letter was forwarded to the Deputy Minister of Trade and Commerce by the secretary of the Board of Trade on March 11, 1912, so your Commissioners feel that these letters taken in conjunction with the letter of January 3, 1913, to the chairman and members of the Commission, recommending the elimination of that part of rule 2, practically settles this controversial matter. However, your Commissioners do not find any evidence showing that this rule was the cause of short weights.

Your Commissioners have attached to the record in this matter, copy of selling agreement as adopted by the committee of the South Island Dairy Association of New Zealand, Limited, of March 29, 1912, also a National Dairy Association sale agreement. Our reason for this, is to show the rule as to shrinkage in New Zealand.

Looking at clause 4 of the South Island Dairy Association selling agreement, it will be found that a shrinkage allowance of two and a half per cent is to be given on correct shipping weights; the same applies to the National Dairy Association sale agreement.

Now, as to the second question submitted to your Commissioners, namely, the complaints of farmers, as shown by memorial on file in the Department of Agriculture, and as to resolutions passed as to the present mode of payment in Montreal.

Your commissioners brought this matter up at every meeting held by them, but there was little or nothing said in favour of a change in the present law, in fact the general concensus of opinion among the farmers appeared to be that if a law were enacted compelling the Montreal merchants to furnish bonds, that many of the smaller men in the trade would be driven out and that competition for cheese and butter would be reduced, and that there was a possible danger of the whole trade falling into the hands of a few of the stronger men in Montreal, and further, that it would be an additional expense which would have to be taken from the producers.

R. B. Faith, Esq., editor of the *Ottawa Valley Journal*, appeared before your Commission at their meeting held in Ottawa, and he also handed in to your Commissioners a memerandum in favour of an Act being passed in relation to the butter and cheese industry, similar to 'The Canada Grain Act of 1912.' This memorandum your Commissioners have given every consideration to, and have attached same to this their report.

Your Commissioners deemed it advisable to call the attention of the Dairymen's Association of Eastern Ontario to the suggestions made by Mr. Faith, and after a full discussion the members of the association expressed themselves as opposed to the bonding system.

The association felt that it might work injury to the producer, as the cost of providing such bonds would have to be ultimately borne by the producer, and that it was open to each and every cheese board to amply protect themselves, as it is now done by many boards. Your Commissioners agree with the views of the Dairymen's Association of Eastern Ontario, as expressed in the resolution above set out.

Your Commissioners find that in the provinces of Ontario and Quebec, and in fact in every province, provision is made for the formation of cheese and butter exchanges. In Ontario and the province of Quebec these exchanges exist, so far as we have been able to ascertain throughout the dairy sections, and it is competent under the authority given to these exchanges to pass rules governing the mode of conducting the purchase and sale of butter and cheese at the exchanges, and the inspection, weighing and shipment of cheese and butter, and the time and mode of payment for cheese and butter bought or sold on the exchange.

Reference to the Ontario Act respecting Cheese and Butter Exchanges, and to a similar Act in the province of Quebec, will show that ample provision has been made by which the producer can protect himself, insofar as payment is concerned, without expense, and your Commissioners find as a matter of fact that many of the associations have adopted provisions by which payment is made absolutely secure, without expense to the producer.

Your Commissioners' attention has been called to what is known as the 'Cole Commission Bill,' which passed the New York Assembly with only a few dissenting votes, and is now before the Senate. This Bill deals entirely with produce consigned to commission merchants for sale and has no bearing on purchases made by individuals.

For the information of those who may be interested in this matter, we have deemed it advisable to attach a copy of this Bill in the state in which it passed the Assembly of the State of New York, but which has not yet become law, as it is now before the Senate.

Your Commissioners would also submit that the question of amendment of the Weights and Measures Act, and the regulations and instructions to inspectors and their assistants be very carefully considered in the light of the evidence given by Mr. Fuller and others, and that there should be an amendment at once in regard to the annual inspection of scales, and that an effort should be made to see that the cheap and inefficient scale which we find has been the cause of so much short weight trouble, is removed if possible from the market.

Your Commissioners would therefore submit that in the interest of the cheese industry of this country, legislation should be passed preventing the shipment of cheese from the place of production, under ten days old.

Your Commissioners would call attention to the very stringent rules in New Zealand as to cheese being fourteen days old before packing. This may be one of the reasons why New Zealand cheese is successfully meeting the competition of our Canadian cheese in the home market.

Your Commissioners are satisfied that the great majority of the farmers of this country are desirous of seeing the cheese industry placed on the best possible basis, and that they are opposed to the manufacturers using the cheap and inefficient scale which is used in so many factories throughout Ontario and Quebec.

Your Commissioners would call attention to the complaints which were received by your Commission from the Home and Foreign Produce Exchange of London, England, and from a large number of English buyers, which complaints are embodied in letters and resolutions, which form part of the record in this investigation.

We deem it expedient to point out one or two statements made in a letter of the 10th of October, 1912, from the secretary of the Home and Foreign Produce Exchange, London, England, as follows:—'Having regard to the position which New Zealand cheese has won on the London market, this question of loss in weight on the Canadian product is a most important one for the Canadian farmers, and for the future of the Canadian trade. There has always been a great deal of irregularity in the weight of Canadian cheese, and it may be said without exaggeration that it is exceptional to find the output of a Canadian factory on arrival here, stand the weight charged.' There was enclosed in this letter a statement shewing details of losses in weight on Canadian cheese in 1911 and 1912. The statement it attached to the letter, and forms part of this report.

Farther on in this letter it is stated, 'Canadian shipments compare very unfavourably with those from New Zealand in the matter of weights, the allowance of two and a half per cent for shinkage in the case of New Zealand, has been found just sufficient to cover any loss in weight during the voyage, the result is there is considerable difference under present conditions in favour of New Zealand cheese.'

Your Commissioners are satisfied from the mass of material which has come before them, that owing to the unsatisfactory condition in which Canadian cheese has been arriving in England, that it is having the tendency of driving the English merchants to buy the New Zealand cheese, and it is time that our farmers considered the fact that New Zealand is going ahead with remarkable strides in the production of dairy products, and is taking a very high place in the English market, and consequently Canadian cheese must be placed on the English market, weight and quality equal to that of cheese placed there by other countries.

While your Commissioners do not feel justified in recommending provisions similar to those contained in the New Zealand Act as to official weigher and grader, yet they cannot but feel that it is owing to these stringent provisions that New Zealand cheese is being received so well in England to-day.

The president of the Montreal Produce Merchants Association has urged very strongly before your Commissioners, that Canadian exporters under the system of weighing which has been in effect for years past, have suffered continually from claims for short weights, more particularly on those cheese which are weighed under the present Montreal rules, and that the allowance of two and a half per cent in the weight for shrinkage which has been the practice in New Zealand, coupled with the persistent shipping of green cheese from Canada, and the consequent excessive shrinkage, is militating so seriously against the Canadian trade, that a change in the Montreal weighing rules seem to the association imperative, if Canada is to hold its hard-earned position in the British market, and in view of these conditions, the president urged that this Commission should recommend that the rules for the weighing of cheese in Montreal be altered, so that an allowance of half a pound per box over and above the balance of the beam, must be made to ensure good weight, in order to meet the changed conditions in connection with the exporting business.

The amendment of the rules advocated by the president of the Montreal Produce Merchants Association has been considered by your Commissioners with great care. We have also taken into consideration that the rules of the Board of Trade of Montreal are more liberal to the farmers, than the rules framed by themselves as would appear by the different by-laws of the different associations throughout the provinces of Ontario and Quebec, and while they feel that the members of the Montreal Produce Merchants Association have suffered, and are now suffering from short weights, yet those short weights are largely in green cheese, and the fault is not all on the side of the farmer.

In the opinion of your Commissioners, both the buyer and the seller are responsible for green cheese being shipped, and your Commissioners while they feel that the Montreal Produce Merchants Association have made out a strong case, yet we do not feel that we can recommend any change in the rules at the present time, but your Commissioners are of the opinion that it might tend to the betterment of the cheese industry in Canada and go a long way in preventing the selling of green cheese by the producer, if the rules were so amended as to permit of a severe penalty being inflicted in the way of increased allowance in weight on all cheese delivered or shipped under ten days old from the making.

Your Commissioners regret to find from the report of J. N. Lemieux and also from complaints on file in the department that there has been some dishonest marking of weights.

Your Commissioners are of the opinion that if an official is appointed such as your Commissioners recommend, that he will be in a position to detect any false marking of weights, and that he can then instruct the proper provincial officials to take the necessary action under the Criminal Code, or the Weights and Measures Act, as your Commissioners are of the opinion that the provisions of the Criminal Code and the Weights and Measures Act are amply sufficient to reach any one found guilty of false marking of weights.

Your Commissioners desire to place on record their appreciation of the courteous treatment accorded to them by the Montreal Board of Trade and the members of the Butter and Cheese Association, as well as the different cheese boards and organizations throughout the country with whom they came in contact.

They also desire to express their appreciation of the valuable assistance given to them by W. J. Edwards, Esq., M.P., J. A. Ruddick, Esq., Dairy and Cold Storage Commissioner, Henry J. Fuller, President Canadian Fairbanks Scale Company, and of the splendid work done by J. N. Lemieux, which is evidenced by his report, which is attached to this our report.

Your Commissioners would summarize their findings, as follows:—

(1) That in the opinion of your Commissioners, Mr. McLeod and his assistants weigh the cheese correctly, and that the scales used by them are well balanced, and absolutely correct, and are examined by the official examiner from time to time.

(2) That the principal cause for the short weights complained of, are as follows:—

(*a*) Cheap, inefficient and not well balanced scales at the factories.
(*b*) Carelessness in weighing at the factories.
(*c*) Dishonest weighing and false marking of weights on boxes at the factories.
(*d*) Weighing the cheese too green at the factories.

(3) That all certificates as to weights are issued by Mr. McLeod and his staff, and that it is impossible for merchants to obtain blank certificates.

(4) That the weights from those factories that are farthest from Montreal, appear to hold out better than those nearer Montreal.

(5) That the reputation of Canadian cheese in the English market is being seriously affected by the shipping of cheese too green.

(6) That a class of scales are being placed on the market in Canada at the present time, bearing the stamp of government inspection, that are not fit for the purposes intended.

(7) That no complaints have been received in regard to the weighing of butter.

(8) That the only complaint your Commissioners have had in regard to the rules, is in connection with that portion of rule 2, which provides that no gains shall be applied against losses in the average, and the Montreal Produce Merchants Association have agreed to eliminate this.

RECOMMENDATIONS.

Your Commissioners would respectfully recommend that you take into consideration the advisability of amending the Act respecting the weighing, measuring and gauging certain articles of general consumption, assented to on the 18th of March, 1865, so as to permit the appointment of special weighers for special trades.

Your Commissioners recommend that a competent official be appointed under the control and direction of the Dairy and Cold Storage Commissioner with headquarters at the city of Montreal, who shall be charged with the duty of investigating the weights of cheese when shortages arise, and as prompt action is necessary in the matter of reweighing cheese, your Commissioners recommend that such official be instructed to inspect daily the certificates of Mr. McLeod and his assistants and where excessive shortages are shown, that he immediately reweigh the cheese, and the result of his reweighing shall be considered to be the correct weighing between buyer and seller, and be final.

Such official should be competent to judge as to quality of cheese, and when instructed by the Dairy and Cold Storage Commissioner he should inspect as to quality, not for the purpose of acting as arbitrator, but for the purpose of detecting faulty cheese, and that he co-operate with the Ontario and Quebec Departments of Agriculture in advancing dairy interests, by reporting such defects promptly.

This official should also be provided with a thoroughly tested scale and be in a position when he found excessive shortages to go to the factory and examine into the reason for same, and if necessary test the scales in the factory. He should also be on the alert as to any false marking of weights, and where same is found notify the proper authorities so that parties guilty of false marking can be properly punished.

Your Commissioner would further recommend that the Weights and Measures Act be amended, so that all scales at cheese factories would be inspected at least once a year.

Your Commissioners further recommend that in the interests of the cheese industry of Canada, legislation should be passed preventing the shipment of cheese from place of production under ten days old.

In regard to the present method of payment for cheese it is evident to your Commissioners that there is no desire among the dairymen of Canada, that there should be any change. This is clearly shown by the resolution passed at the meeting of the Dairymen's Association of Eastern Ontario.

All of which is respectfully submitted.

(Sgd.) R. A. PRINGLE,
Chairman.

A. J. HODGSON,
Commissioner.

S. J. MACDONELL.
Commissioner.

RETURN

(154)

To an Order of the House of Commons, dated January 27th, 1913, for a Return showing the amount of the subsidy paid to each of the four original provinces of the Dominion at Confederation, and the population on which such payment was based; the subsidy payable to each of the remaining five provinces on entering the Union, and the population on which such payment was based; the sum added to the subsidy of any province as better terms, and the date when such addition was made, respectively; the details of each readjustment of subsidies since 1867, and the yearly subsidy at present payable to each province with the population on which such payment is based, and the original debt allowance, if any, respectively, placed to the credit of each province on entering the union.

LOUIS CODERRE,
Secretary of State.

1.—Amount of subsidy paid to each of the four original provinces.

Ontario.—$1,196,872.80; population, 1,396,091, census 1861.

Quebec.—$959,252.80; population, 1,111,566, census 1861.

Between 1867 and 1873, under British North America Act, 1867, section 112, there was deducted from the above subsidies interest on the excess of debt (the capital of this excess of debt rising in amount at the passing of the relieving Act 1873 to $10,506,988.84) and repayment of these deductions formed the basis of the increase of the subsidies under 47 v.c. 4, 1884.

Nova Scotia.—$324,685.60; population, 330,857, census 1861. $82,698; special allowance for 10 years. $42,185.21; interest on debt allowance.

The province received as a debt allowance credit for $8,000,000 under the British North America Act 1867, sec., 114, and a further sum of $1,186,756 under the Act of 1869, and a still further sum of $199,490 under the Acts of 1873 and 1874. These sums were applied to offset the province debt and are now reduced to a capital sum of $262,560.41, yielding an interest of $13,128.02, and this latter sum forms part of the subsidy now paid.

New Brunswick.—$251,637.60; population 252,047, census 1861; $63,000; special allowance for 10 years.

The province received as a debt allowance credit for $7,000,000 under the British North America Act 1867, section 115. This sum was almost entirely absorbed in payment of existing debts and practically no payments of interest were made by way of subsidy in the early years.

2. Subsidy paid to each of the other provinces upon entering the union.

Manitoba.—$43,600; population 17,000, estimated 1870. $23,604.50; 5 per cent on $472,090 debt allowanee.

The province not being in debt was paid this amount of interest on the capital sum of $472,090 under the Union Act of 1870, and also the interest on the additional capital sum of $79,357 under the Act of 1873, in varying and diminishing amounts from time to time as the principal was applied in the payment of province liabilities, until, in 1889, the capital of these two sums became redeced to $87,755 90, yielding a yearly sum of interest of $4,387.80 and this latter amount remains a permanent increase to and forms part of the annual subsidy now paid.

British Columbia.—$183,000; population 60,000, estimated 1871. $24,995.67; 5 per cent on $499,913.52 debt allowance.

The province received a debt allowance of $1,666,200 under the Act of 1871 and a further sum of $280,084 under the Act of 1873. These amounts were applied against the province debts and the varying sums of interest paid on the balances became finally reduced to 5 per cent on the capital of $499,913.52 and the interest on this sum remains a permanent increase to and forms part of the annually subsidy now paid.

Prince Edward Island.—$150,216.80; population 94,021, census 1871. $130,624.59, interest on debt allowance.

The province received as a debt allowance credit for $4,701,050 under the Imperial Order in Council of 26th June, 1873, which was applied in the reduction of the province debt and this together with $182,973.78, allowed under the Act of 1884, was finally reduced to a principle of $775,791.83, yielding an interest sum of $38,789.58; but this latter sum is offset by a contra charge of $39,120.10 which is the interest on $782,402.33 the balance of the land account, thus resulting in an actual reduction of $330.52 to the sums forming part of the annual subsidies now being paid.

Saskatchewan.—$1,030,375; population 250,000, estimated 1905. $93,750; additional for 5 years.

Alberta.—$1,030,375; population 250,000, estimated 1905. $93,750; additional for 5 years.

3.—Sums added to the subsidy of any province as *better terms.*

Ontario.—

$142,414	48	47 v.c. 4, 1884.
789,484	90	B.N.A. Act 1907.
267,657	30	Census 1911.
$1,199,556	48	
50	40	Less for readjustment of 1911 Census.
$1,199,506	08	Total.

Quebec.—

$127,460	68	47 v.c. 4, 1884.
599,865.60		B.N.A. Act 1907.
285,125	60	Census 1911.
$1,012,451	88	
2,074	40	Less for readjustment of 1911 Census.
$1,010,377	48	Total.

Nova Scotia.—

$82,698 00	32 v.c. 2, 1869, Temporary allowance for 10 years from July 1, 1867.
45,554 40	Census 1871.
13,128 02	36 v.c. 30, 1873.
9,760 00	Census 1881.
39,668 44	47 v.c. 4, 1884.
177,659 20	B.N.A. Act 1907.
26,212 00	Census 1911.
$311,982 06	
80	Less for adjustment of 1911 Census.
$311,981 26	Total.

New Brunswick.—

$26,837 60	Census 1871.
150,000 00	36 v.c. 41 s. 1, 1873.
28,511 30	Census 1881.
26,464 96	47 v.c. 4, 1884.
24 00	Census 1891.
137,885 60	B.N.A. Act 1907.
16,614 40	Census 1911.
$386,337 76	
80	Add for readjustment of 1911 Census.
$386,338 56	Total.

Manitoba.—

$26,746 96	Temporary allowance 1st July, 1875 to 31st December, 1881.
15,653 04	Temporary allowance 1st July, 1879, to 31st December, 1881.
4,387 80	33 v.c. 3, 1870.
171,400 00	45 v.c. 5, 1882.
5,541 25	47 v.c. 4, 1884.
210,666 69	48-49 v.c. 50, 1885.
2,004 80	Census 1891.
29,995 20	Estimated population 1894.
2,740 00	Census 1896.
13,351 32	61 v.c. 4, 1898.
49,428 80	Census 1901.
75,831 20	Estimated population 1904.
12,550 40	Census 1906.
130,000 00	B.N.A. Act 1907.
86,749 60	Estimated population 1909.
4,604 80	Less for adjustment Census 1911.
$790,042 26	
617,114 88	2 Geo. 5, c. 42, 1912.
$1,407,157 14	Total.

British Columbia.—

$4,155 39	47 v.c. 4, 1884.
30,538 40	Census 1891.
64,387 20	Census 1901.
215,000 00	B.N.A. Act 1907.
191,704 00	Census 1911.
$505,784 99	
9,345 40	Add for adjustment of Census 1911.
$515,139 39	Total.

Prince Edward Island.—

$11,925 60	Census 1881.
20,000 00	50-51 v.c. 8, 1887.
120 00	Census 1891.
30,000 00	1 Ed. 7, c. 3, 1901.
70,000 00	1 Ed. 7, c. 3, 1907.
100,000 00	2 Geo. 5, c. 42, 1912.
$232,045 60	
330 52	Less for balance of interest on Land account.
231,715 08	Total.

Saskatchewan.—

$6,210 40	Census 1906.
130,000 00	B.N.A. Act 1907.
63,389 60	Census estimated 1909.
318,214 60	Census 1911.
$517,813 60	
3,632 00	Add for adjustment of 1911 Census.
$521,445 60	Total.

Alberta.—

$130,000 00	B.N.A. Act 1907.
12,693 60	Estimated census 1909.
87,653 60	Census 1911.
$230,347 20	
616 80	Less for adjustment of 1911 Censes.
$299,730 40	Total.

4. Details of each readjustment of subsidies since 1867.

Answered in No. 3.

5. Present subsidies.

		Population.	Census.
Ontario	$2,396,378 88	2,523,274	1911
Quebec	1,969,630 28	2,002,712	1911
Nova Scotia	636,666 86	492,338	1911
New Brunswick	637,976 16	351,889	1911
Manitoba	1,450,757 14	461,630	1911
British Columbia	723,135 06	392,480	1911
Prince Edward Island	381,931 88	109,078	1891
Saskatchewan	1,548 188 60	492,432	1911
Alberta	1,260,722 20	374,663	1911

6.—Original debt allowance credited to each province.

Ontario and Quebec, conjointly	$62,500,000	B.N.A. Act, 1867.
Nova Scotia	8,000,000	"
New Brunswick	7,000,000	"
Manitoba	472,090	33 v.c. 3, 1870.
British Columbia	1,666,200	O.C. Windsor, May 16, 1871.
Prince Edward Island	4,701,050	O.C. Windsor, June 26. 1873.
Alberta	8,107,500	4-5 Ed. 7, c. 3, 1905.
Saskatchewan	8,107,500	4-5 Ed. 7, c. 42, 1905.

T. C. BOVILLE,
Deputy Minister of Finance.

RETURN

(170)

To An Order of the House of Commons, dated March 3, 1913, for a copy of the contract passed on the 6th day of August, 1910, between the city of Quebec and the Transcontinental Railway Commissioners, for the acquisition by the latter of the property known as the Champlain Market, to be used as a station and terminals for the said railway; of all correspondence between the said city and the present Commissioner of the said railway with the Minister of Railways, or any other minister, with regard to the non-execution of the said contract by the said Commission.

LOUIS CODERRE,
Secretary of State.

File No. 5875-77 R.

Department of Railways and Canals.

RETURN No. 138-1912-1913.

Return in answer to an Order of the House of Commons, dated March 3, 1913, calling for a copy of the contract passed on the 6th day of August, 1910, between the City of Quebec and the Transcontinental Railway Commissioners, for the acquisition by the latter of the property known as Champlain Market, to be used as a station and terminals for the said railway, of all the correspondence between the said city and the present Commissioner of the said railway, with the Minister of Railways, or any other minister, with regard to the non-execution of the said contract by the said Commission.

The Commissioners of the
Transcontinental Railway,
Ottawa, March 11, 1913.

J. W. Pugsley, Esq.,
Assistant Secretary,
Department of Railways and Canals,
Ottawa.

Dear Sir,—Referring to your letter of the 8th instant, return No. 138, 1912-13, I have the honour to hand you herewith this return, in triplicate.

Your obedient servant,

P. E. RYAN,
Secretary.

Return No. 138, 1912-13.

To Order of the House of Commons, dated the 3rd day of March, 1913.

1. Copy of contract passed on the 26th day of August, 1910, between the City of Quebec and the Commissioners of the Transcontinental Railway, relating to Champlain Market.

2. Copy of all correspondence between the City of Quebec and the present Commissioners of said railway, with regard to the non-execution of the said contract by the said Commission.

CITY CLERK'S OFFICE,
QUEBEC, June 1, 1912.

Major LEONARD,
President of the
Transcontinental Railway Commission,
Ottawa.

Mr. PRESIDENT,—I am directed by the Mayor of the City of Quebec to forward you a copy of a Resolution unanimously adopted by the City Council at a meeting held on the 31st day of May, 1912, and to submit it to your kind consideration.

Believe me, dear sir,

Yours truly,

(Sgd.) H. J. J. B. CHOUINARD,
City Clerk, by A.G.

CITY HALL, CITY CLERK'S OFFICE,
QUEBEC, June 1, 1912.

At a meeting of the Municipal Council of the City of Quebec, held on the 31st day of May, 1912, it was

RESOLVED that, in the interest of the tax-payers, this council takes the liberty of drawing the attention of the chairman of the Transcontinental Railway Commission to the fact that the City of Quebec has sold, two years ago, for a nominal sum, to the Transcontinental Railway Commission, the site of the Champlain Market, in consideration of important works which were to be executed immediately, and which were to cost several millions of dollars. The contract passed to that effect has not yet been put to execution, and this council would be most pleased to learn the intentions of the Transcontinental Railway Commission with regard to the execution of the works which were to be undertaken on said site.

Certified,

True copy,

(Sgd.) H. J. J. CHOUINARD,
City Clerk.

OTTAWA, June 3, 1912.

H. J. J. CHOUINARD, Esq.,
City Clerk,
Quebec, P.Q.

DEAR SIR,—I beg to acknowledge receipt of your letter of the 1st instant, enclosing copy of Resolution passed by the Quebec City Council on the 31st ultimo, in

reference to the Champlain Market property purchased by this Commission, and in reply to say that the matter will receive due consideration.

Yours very truly,

(Sgd.) R. W. LEONARD.

The twenty-sixth day of the month of August, one thousand nine hundred and ten.

Before Charles Edmond Taschereau, Notary Public for the Province of Quebec, residing in and practising at Quebec:

Appeared:—

The City of Quebec, here represented by His Honour, Napoleon Drouin, in his capacity as mayor of the said city and authorized for the purpose of these presents by and in virtue of a resolution passed by the Municipal Council of the said City of Quebec, at a sitting of the said council of date the fourteenth day of June, nineteen hundred and ten, and of which a certified copy is annexed to the minute of these presents, the party of the one part, hereinafter called the vendor, and

The Transcontinental Railway Commission, a body politic and incorporated under and by virtue of the statute of the Parliament of Canada, 3 Edward VII, chapter 71, the said Commission acting herein by means of its president, the Honourable Simon Napoleon Parent, of the City of Ottawa, advocate and King's Counsel, the said Commissioners authorized for the purpose of these presents by an Order in Council of the Government of the Dominion of Canada, dated the twenty-second day of the present month of August, and of which certified copies are also annexed to the minute of these presents, the parties of the other part, hereinafter called the vendee, which parties have declared to us as follows:—

Whereas, by the Act of the former Parliament of Canada, 16 Victoria, chapter 234, of June 14, 1853, Her Majesty has granted to the said City of Quebec, a piece of land situate in the said city, then known and designated under the name of the Cove Harbour, and now known and designated by the number two thousand three hundred (2,300) in the official cadastre for the Champlain quarter of the said City of Quebec.

Whereas, in order to comply with the conditions imposed on the said City of Quebec, by this statute, 16 Victoria, chapter 234, the said city has converted the said Cove Harbour into a piece of firm ground and has built wharfs and landing places in front thereof for the purpose of facilitating the access to and the mooring of ships, in compliance with the said law, and where for more than fifty years, it has constructed thereon and maintained a public market with market hall, the whole known as being the Champlain market.

Whereas, by the statute of the Parliament of Canada, 3, Edward VII, chapter 71, His Majesty has decided to build for the state, a railway from the City of Moncton, in the Province of New Brunswick, to Winnipeg, in the Province of Manitoba, crossing the St. Lawrence river by a bridge now under construction between the parishes of St. Romuald and St. Felix of Cap Rouge, near the City of Quebec.

Whereas, for the use and efficiency of operating the said railway, the Commission proposes to build a branch line or branch lines of the said railway from the said bridge under construction over the river St. Lawrence, or to leave from other points to meet at the harbour and in the City of Quebec, for the despatch or receiving by sea, of the general traffic of the said railway and of other railways and that for this purpose, the tracks of the said railway are to be laid along the river St. Lawrence, in the said Champlain quarter, in order to make use of the wharfs, docks, buildings, elevators and other accessories already constructed, or which are to be there constructed.

Whereas, for the purposes above mentioned, the Commission is going to construct in the said Champlain quarter, a station, waiting rooms, sheds and warehouses for merchandise, works, workshops and other buildings, and to acquire for these purposes the lands and rights of way, necessary for the road and the construction of the said buildings.

Whereas, in order to determine the indemnity to be granted to the City of Quebec for the purchase of the said piece of land, the parties are agreed not to have recourse to an arbitration, and have consented to the transfer and sale of the said piece of land and of the wharfs and buildings thereon constructed, on the conditions hereafter mentioned.

Accordingly, the said City of Quebec transfers and sells to the said vendees, the said piece of land now known and designated under the number two thousand three hundred (2,300) on the official plan and book of reference of the cadastre for the Champlain quarter, of the City of Quebec, with the buildings thereon constructed and bounded as follows:—On the north by the Champlain Market street, on the south by the lot numbered two thousand three hundred and one, on the east by the river St. Lawrence, and on the west by Cove street, measuring four hundred and twenty-seven feet on Champlain Market street, three hundred and seventeen feet and six inches on the line dividing it from the cadastral lot two thousand three hundred and one, four hundred and sixty feet over the River St. Lawrence, and three hundred and thirty-nine feet over Cove street without guarantee of precise measurements and without reserve on the part of the vendor and with the rights which the vendor may have over the River St. Lawrence and its shores in front of the real estate above described and as comprised between the letters A, B, C, D, E, F, G, H, I, J and K, on the plan hereto annexed and signed by the parties and the said notary with the following conditions, that is to say:—

1. The vendee shall take possession of the said piece of land and the buildings thereon erected on the first November next, with the exception of the building now occupied and belonging to Joseph Simard and Joseph Napoleon Beaumont on the wharf of the said Champlain market, which building the said Simard and Beaumont are to remove on or before the thirtieth of April, nineteen hundred and twelve, in conformity with the lease entered into between them and the said city, before Notary Joseph Allaire, on thirtieth January, nineteen hundred and six.

2. The said city shall have, however, till the first November, nineteen hundred and twelve, gratuitously, the use and enjoyment of the wharfs and of that portion of the market which the commission shall not need and which will not be injurious to the construction of the station or railway station, also the landing places, pontoons and accessories erected on the said lot of land with passage and access to them, in order to lay alongside and moor vessels and for the purposes of maritime trade, and it shall continue, during the said space of time, to collect, for its own profit, the wharfage tolls as it now does, on condition of its making the repairs which may become necessary, the whole at its own risk and peril.

3. The said commission engages itself to expend a sum of two million dollars at least to construct on the said piece of ground and the ground in the vicinity of a railway station or station, sheds, warehouses, workshops and works, the said sum not including the cost of purchase or of the expropriation of the lands to be acquired for the right of way for the lines of the said railway, works, warehouses, &c. These workshops and works shall be the most extensive of the Transcontinental railway in the Province of Quebec.

4. After taking possession of the said lot of ground, the commission shall begin the works for which the said piece of ground is acquired and shall diligently continue the said works and the construction of the buildings which it now engages itself to build thereon.

5. If, however, the said commission cannot procure, within the limits of the city a piece of ground suitable for the construction and operation of the workshops and works, it is agreed that the said workshops and works may be constructed, maintained and operated at a place outside the limits of the city, provided that such place be also brought as near as possible to the said limits, but not going beyond the suburbs.

6. For the construction of the different buildings herein above mentioned and for the placing of the tracks of the said railway, if it happens that the Commission needs to use the ground of some street or part of a street opening on this ground or enclosing it, now in existence in the vicinity of its works in the city, it shall furnish the ground necessary to open and construct new streets or parts of streets to replace, as much as there shall be need for, the streets or parts of streets to be taken by the commission, the whole subject to the approval and control of the city engineer, the said commission pledging itself that the public traffic should not be interrupted until the new streets be opened.

7. The said new streets or parts of streets shall be then made and built with diligence and maintained thereafter by the commission at its own cost.

8. The city shall have the right to make such regulations as it shall judge suitable for the purpose of putting the said streets under the authority of its municipal regulations, relating to the police, traffic and the maintenance of good order.

9. It is agreed between the parties that the grantee shall keep the City of Quebec indemnified from all damages which may result and be sought from the city by the riverside proprietors of the said abolished streets or parts of streets, by reason of the said abolition and closing of the said streets or parts of streets.

10. As complement of the indemnity in favour of the said city, by reason of the various conditions and considerations hereinbefore enumerated, the grantee now pays to the said City of Quebec, a sum of one hundred thousand dollars, for which a receipt is given by these presents.

Made and passed at Quebec, the day and year aforesaid under the number five thousand and four hundred and ninety-nine of the minutes of the said C. E. Taschereau.

In witness whereof the parties have signed with the said notary after reading of these presents.

(Signed) S. N. PARENT.
NAP. DROUIN.
C. E. TASCHEREAU, N.P.

True copy of the minute which remains of record in my office.

(Signed) C. E. TASCHEREAU, N.P.

RETURN

(190)

February 7, 1913.

COPY of Correspondence respecting the Treaty of Commerce and Navigation between the United Kingdom and Japan.

SIR,—I have the honour to inform you that the Government are willing to submit to the Parliament of Canada a Bill by which Canada shall adhere to the Treaty of Commerce and Navigation between the United Kingdom and Japan signed at London on the 3rd April, 1911.

2. The adherence of Canada would be upon the conditions and with the proviso set forth in the enclosed draft Bill which is submitted for the consideration of the Imperial Japanese Government.

3. The proviso that the treaty shall not be deemed to repeal or affect any of the provisions of the Immigration Act follows the language which was approved by the Imperial Japanese Government in relation to the recent treaty negotiated with the United States of America.

4. The Imperial Japanese Government are doubtless aware, as the fact is, tha the Immigration Act applies to the immigration of aliens into Canada from al countries, including the British Empire itself and makes no discrimination in favou of any country. It is not perceived, therefore, that your Government will have any objection to the embodiment in the enclosed draft Act of Parliament of the proviso which has already been agreed to in the case of the United States.

I have the honour to be, sir,
Your obedient servant,

(Sgd.) R. L. BORDEN.

Honourable T. NAKAMURA,
Consul General for Japan,
385 Laurier Avenue E.,
Ottawa, Ont.

His Majesty, by and with the advice and consent of the Senate and House of Commons of Canada enacts as follows:—

I. The treaty of April 3, 1911, between His Majesty the King and His Majesty the Emperor of Japan, set forth in the schedule to this Act, is hereby sanctioned and declared to have the force of law in Canada: Provided that

(*a*) Nothing in the said treaty or in this Act shall be deemed to repeal or affect any of the provisions of the Immigration Act.

(*b*) Article VIII. of the said treaty shall be deemed not to apply to Canada.

IMPERIAL CONSULATE GENERAL OF JAPAN,
OTTAWA, March 1, 1913.

SIR,—I have the honour to acknowledge the receipt of your note dated the 7th ult., stating that your Government are willing to submit to the Parliament of Canada an Act by which Canada shall adhere to the Treaty of Commerce and Navigation between Japan and Great Britain signed at London on the 3rd April, 1911, and enclosing for the consideration of the Imperial Government a draft Bill setting forth the conditions and proviso upon which the adherence of Canada will depend.

Having reported the matter at once to my Government, I am now in receipt of a reply stating that the Imperial Government have no objection to the proposed Bill and that they feel assured that the Immigration Act of Canada of 1910 being applicable, as stated in your note, to the immigration of aliens into the Dominion of Canada from all countries including the British Empire itself, no discrimination will be made against Japanese subjects in this respect.

I have the honour to be, sir,
Your obedient servant,

(Sgd.) T. NAKAMURA.

The Right Honourable R. L. BORDEN,
Prime Minister of Canada,
Ottawa.

OTTAWA, ONT., 5th March, 1913.

SIR,—I have the honour to acknowledge the receipt of your note dated the 1st instant, in relation to the Treaty of Commerce and Navigation between Great Britain and Japan signed at London on the 3rd April, 1911, in which you communicated to me the reply of the Imperial Japanese Government stating that they have no objection to the proposed Bill and that they feel assured that the Immigration Act of Canada of 1910 being applicable to the immigration of aliens into the Dominion of Canada from all countries including the British Empire itself, no discrimination will be made against Japanese subjects in this respect.

I have the honour to inform you that the Government of Canada has received this reply with the greatest satisfaction, and that the proposed Bill will be introduced so soon as the pending business now engaging the attention of Parliament will permit.

I have the honour to be, sir,
Your obedient servant,

(Sgd.) R. L. BORDEN.

Honourable T. NAKAMURA,
Consul General for Japan,
385 Laurier Avenue E.
Ottawa, Ont.

RETURN

(191)

Copy of Order in Council in connection with the appointment of a Commission to inquire into the claims of the Province of British Columbia for exceptional treatment.

The Right Honourable the Prime Minister submits that, by Order in Council, dated the 1st February, 1913, it is provided that the Government of Canada join with the Government of the Province of British Columbia in the constitution of a Commission of three persons, one to be named by the Government of Canada, one by the Government of British Columbia, and the third to be selected by the two commissioners, or failing such selection, by the Secretary of State for the Colonies, to act as a tribunal to consider and report upon the claim of the Province of British Columbia for exceptional treatment by reason of permanent physical conditions and otherwise.

The Prime Minister recommends, in pursuance of the provisions of the said Order in Council that the following gentlemen be appointed as Commissioners, under the provisions of the first part of the Inquiries Act, Revised Statutes of Canada, 1906, to inquire into the claims of the province of British Columbia for exceptional treatment, as above set forth:

On behalf of the Government of the Dominion of Canada, Zebulon Aytoun Lash, of the city of Toronto, Esquire, one of His Majesty's Counsel learned in the law:

On behalf of the Government of the Province of British Columbia, Ernest Victor Bodwell, of the city of Victoria, Esquire, one of His Majesty's Counsel learned in the law, and that the third Commissioner be selected by agreement of the two Commissioners hereby appointed, or failing such agreement, by the Right Honourable the Secretary of State for the Colonies.

The Committee submit the same for approval.

RODOLPHE BOUDREAU,
Clerk of the Privy Council.

RETURN

(191a)

On a report from the Right Honourable the Prime Minister representing that on the 6th day of October, 1911, reference was made by the Prime Minister of the Province of British Columbia to previous correspondence with regard to the appointment of a competent tribunal to consider and report upon the claims of that Province for exceptional treatment by reason of permanent physical conditions and otherwise.

The Prime Minister observes that on the 22nd of January, 1912, an official telegram was sent to the Prime Minister of the Province to the following effect:—

> 'Replying to your memorandum of the 6th November, 1911, respecting the claims of British Columbia for exceptional treatment by reason of permanent physical conditions and otherwise, we are prepared to appoint a Commission to investigate the merits of claims of your Province in this regard, one Commissioner to be appointed by this Government, one by your Government and the third to be selected by agreement of the two Commissioners, failing such agreement by the Secretary of State for the Colonies.'

The Prime Minister further observes that after discussion with the Prime Minister of British Columbia a conclusion has been reached that it is desirable to appoint the proposed Commission without further delay.

The Prime Minister therefore recommends that the Government of Canada join with the Government of British Columbia in the constitution of a Commission of three persons, one to be named by the Government of Canada, one by the Government of British Columbia, and the third to be selected by the two Commissioners, or failing such selection by the Secretary of State for the Colonies.

The Prime Minister further recommends that the said Commissioners be appointed under the provisions of the first part of the Inquiries Act, R.S. 1906, Cap. 104, for the purpose of inquiry and report into and upon the claims of British Columbia for exceptional treatment by reason of permanent physical conditions and otherwise, as such claims are set forth in a memorandum hereto attached which was submitted by the Government of British Columbia on the 10th day of October, 1906.

All of which is respectfully submitted.

MEMORANDUM RE BRITISH COLUMBIA'S CLAIMS FOR SPECIAL CONSIDERATION.

On behalf of the Government of British Columbia, I adhere to the general principle of the rights of the provinces to increased subsidies, and, therefore, support the resolution which has been submitted in favour of affirming the resolutions of the Quebec Conference, in so far as they are not inconsistent with or prejudicial to the claims of any particular province for additional recognition with respect to such matters as form the subject of those resolutions.

The Government of British Columbia cannot, however, accept them as a final and full settlement of its demands. There are special considerations in the case of British Columbia which involve additional recognition in its behalf. These considerations are set forth in the memorial presented to the Dominion Government last

year, a copy of which is herewith submitted,* and a resolution affirming the position of the provincial government was unanimously adopted by the legislature of the Province of British Columbia. The resolutions of the Conference of Quebec, which if carried into effect, would increase the subsidies already received by British Columbia, relatively speaking, leave it no better, if as well, off. This is obvious for two reasons:—

1st. Owing to the excessive contributions made by British Columbia to the federal treasury, as compared with other provinces, the province would pay an undue proportion of the amount of the increase in subsidies to all the provinces. A parallel in support of this is afforded in the allowance which was made at the time of confederation to certain provinces on account of the greater debt of other provinces, in the payment of which the people of all the provinces had to share. Our case is precisely similar now to that in which those provinces would have been had no such allowance been made.

2nd. The proposed increase in subsidies being largely based upon population, the special physical conditions which make the cost of government in the Province of British Columbia disproportionately great are not provided for.

Briefly, as set forth in the memorial of the Government of British Columbia, already referred to, 'The claims being presented by the other provinces for increased subsidies are similar in character to some of those of British Columbia, with this important distinction, that the reasons which alike give them foundation are greatly accentuated in the case of this province.'

A brief summary of the arguments in our case is herewith submitted:—

For a proper knowledge of the case, it is necessary to consider the conditions which existed at the time British Columbia entered confederation, and the mental attitude in which the terms of union between the province and the Dominion were framed. Public sentiment, as represented in Parliament, was prejudicial to more favourable terms being granted. A large section of Canada was utterly opposed to union with British Columbia on the terms under which the construction of a transcontinental railway was rendered obligatory. It was only upon grounds of large public policy of a national character—the rounding out of confederation—that their adoption was justified. It was almost universally conceded that the province, physically handicapped as it was, would not pay its way in confederation, and it was strongly contended that the construction of the Canadian Pacific Railway—the price asked by British Columbia—was too great a sacrifice on the part of the Dominion, and that the railway when built would prove unremunerative. Consequently the financial terms conceded to British Columbia were the least favourable possible.

A similar attitude towards British Columbia was maintained as long subsequently as 1884, when the Settlement Act was passed, whereby the outstanding differences between the provinces and the Dominion were finally adjusted. By the terms of the Settlement Act, the province, tired of delays and wearied with fruitless negotiations, agreed to transfer 3,500,000 acres of the best land in Peace River district in lieu of expenditures on the part of the Dominion, amounting in all to about $1,100,000. These lands, worth now at the lowest valuation $17,500,000, were parted with to secure a railway from Esquimalt to Nanaimo, costing less than $30,000,000, which, under the Carnarvon terms, the Dominion Government has pledged itself to build without cost to the province. The value of such concession was not then foreseen. The Treaty of 1871, as revised in 1884, was made in misapprehension of the possibilities of British Columbia and the development to accrue from the building of the Canadian Pacific Railway.

The subsequent course of events was shown that British Columbia has not only paid its way in confederation, but has contributed in thirty-five years nearly $19,000,-

* See Appendix, pages 15 to 39.

000 to the federal treasury in excess of what it has received therefrom; that the Canadian Pacific Railway has been instrumental more than any other factor in building up Canada, with benefits vastly greater to eastern Canada than to British Columbia; and that the Settlement Act gave a realizable asset to the Dominion nearly twenty times greater than the expenditure which it involved.

The Government of British Columbia submits as incontrovertible that as the original and amended term of union having been based upon assumptions which have proved groundless, and as that the very opposite of what was anticipated has transpired, it is incumbent, in the light of developments which have actually taken place, upon the Dominion, morally and constitutionally, to now substitute fairer terms for those made perforce in anticipation of what did not happen.

This contention is strictly in line with what is promised in the resolution of the Quebec Conference of 1902, to the effect that at the time of the passing of the B.N.A. Act 'it was impossible to foresee the development of the Dominion,' and to provide in an unalterable and fixed way for the requirements of the various local governments for all time to come, except that the conditions are so peculiar and exceptional in the case of British Columbia as to demand exceptional consideration in the revision of financial terms now deemed necessary.

In the memorial presented by the Government of British Columbia to the Dominion authorities and in various letters and memoranda, the historical aspect of the case has been reviewed, and the reasons for special consideration given in extenso. In addition to the foregoing, it has been pointed out that there are certain conditions and physical disabilities, permanent in character, which accentuate the position of British Columbia considered in relation to the other provinces, and that abnormally increase the cost of administration in that province as compared with the average conditions of the rest of the Dominion, entailing as well disadvantages of commercial, industrial and political character. These are:—

1. The cost of administration, owing to the physical character of the country.
2. The distance from the commercial, industrial and administrative centres of eastern Canada.
3. The non-industrial character of the province, as compared with eastern Canada, whereby a large percentage of goods imported and consumed, increasing the contributions to the federal treasury, in the way of taxes in a ratio of three to one.
4. The disadvantages of the province in relation to the market for its special products.

Under the first head, it is pointed out and supported by tables filed in the official records of all the provinces that the physical conditions referred to seriously affect the cost of government under every head.

The following table, covering a period of thirty years of all the provinces, will sufficiently illustrate these contentions:—

Provinces.	Average Population for Thirty years.	Total Expenditure for Thirty years.	Average per head per year.
	$	$	$
British Columbia	90,634	32,243,068	11 86
Manitoba	123,801	16,025,974	4 31
Prince Edward Island	104,062	9,179,906	2 94
Quebec	1,421,994	104,027,881	2 44
New Brunswick	314,802	20,381,060	2 16
Ontario	1,961,260	105,798,513	1 79
Nova Scotia	434,585	21,525,863	1 65
	4,451,138	309,182,264	2 32

British Columbia is a country, roundly speaking 900 miles in length and 500 miles in width, including an area of 381,000 square miles, extremely mountainous in character and settled in widely detached valleys with a sparse population. This involves an expenditure for government very much greater than in provinces which are compact and do not present the same peculiar conditions with which that province is confronted.

2. The geographical position of the province, though very important in one sense, is very disadvantageous in relation to the Dominion as a whole. We sell very little to eastern Canada on account of the nature of our products, and we buy very largely there for the same reason. Interprovincial trade was the material object in confederation. The province, therefore, having four per cent of the population pays eight per cent of the price of confederation, and gets in return one per cent of the trade (see table, page 8, memorial prepared by Mr. George Johnston, late Dominion Statistician).

3. The non-industrial character of the province accounts for the enormous contributions it has made to the federal treasury in proportion to the amount received in return. An elaborate statement of the account appears in the memorial referred to, which has been brought up to date, showing an excess of contributions over receipts amounting to nearly $19,000,000. This is not submitted as an exact mathematical solution of financial relations, but is substantially accurate, and represents approximately the actual condition of affairs in respect to receipts and contributions. There is the further consideration that the population, which accrues directly to the benefit of the Dominion, accrues in the ratio of about three to one, as compared with the average benefits from population, in other sections of Canada.

4. The geographical position of the Dominion also handicaps it in relation to the products which it sells. This is true, for the most part, of foreign exports of lumber, of fish and of minerals, and of many other things that it is hoped to produce in the future, such as manufactures of iron and paper. For the most part, British Columbia sells in the markets of the world in competition with the world. It cannot sell in eastern Canada in competition with eastern manufactures owing to distance, and is thus handicapped in what it buys and what it sells.

Its geographical position has still further the effect of increasing the cost of consumption by imposts in the way of freight on goods which are imported from a supply centre of Canada and elsewhere.

In addition to the natural disadvantages under which the province has laboured, may fairly be cited the political disadvantages of a limited representation in Parliament and the long distance from the seat of government. Without reflection upon one administration at Ottawa more than another, the province, by reason of these handicaps, has not in the past received that consideration for its various wants that is extended to the people of eastern Canada, who have large representation and easy access to the capital.

Comparing the terms ceded to British Columbia and to the new provinces of Saskatchewan and Alberta, it is found in effect that when these provinces are in receipt of the total allowances to which they will be ultimately entitled per annum, the amount, in round numbers, will be $2,250,000, while the total of British Columbia's allowance, when it has reached its maximum, will be less than $500,000. It is not contended that the new provinces have received too much, but that British Columbia has received far too little. Alberta and Saskatchewan contain large, compact, arable areas presenting no physical difficulties or obstacles to development. While it may be said that in their case the lands and minerals belonged to the Dominion, if we take the case of British Columbia, with its public domain in its own right, the average of its receipts for the past thirty years on account of its natural resources has only been $235,000 per annum, from which must be deducted the cost of administration, not less, at the present time, than $100,000 per annum. It is submitted further that the readjustment of the subsidies every two and a half years according to the increase

of population ascertained by census taking, in our estimation, is another important advantage which the new provinces have over British Columbia. They obtain almost immediately in increased subsidy the benefit of increased population, while British Columbia, in which the increase of population is also very rapid, has to wait ten years for readjustment. There is therefore only one of two conclusions to be drawn from a comparison of the terms in the two cases; either the new provinces have been too generously endowed by the Dominion—which is not alleged—or British Columbia has received very inadequate consideration of its requirements.

The Government of British Columbia, in view of all the considerations which have been advanced in support of the claims of that province, reaffirms its position in regard to the desirability of a complete investigation by a competent tribunal of the merits of the provincial contention. It is, therefore, asked that a Commission be appointed consisting of three persons of eminent repute, one to be named by the Government of the Dominion of Canada, one by the Government of British Columbia, and the third by the Honourable the Secretary of State for the Colonies. It is asked that the reply of the Dominion Government be made definite and final within three months from the present time.

RICHARD McBRIDE,
Premier.

Ottawa, October 9, 1906.

ROYAL COMMISSION

ON

INDUSTRIAL TRAINING AND TECHNICAL EDUCATION

REPORT OF THE COMMISSIONERS

Parts I and II

PRINTED BY ORDER OF PARLIAMENT.

OTTAWA
PRINTED BY C. H. PARMELEE, PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1913

ROYAL COMMISSION ON INDUSTRIAL TRAINING AND TECHNICAL EDUCATION.

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THE ROYAL COMMISSION

CANADA.

GEORGE THE FIFTH, *by the Grace of God, of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas,* KING, *Defender of the Faith, Emperor of India.*

To all to whom these presents shall come, or whom the same may in anywise concern,

GREETING.

WHEREAS in and by an Order of Our Governor General in Council bearing date the first day of June, in the year of Our Lord one thousand nine hundred and ten (a copy of which is hereto annexed), provision has been made for inquiry by Our Commissioners therein and hereinafter named into the needs and present equipment of Our Dominion of Canada respecting industrial training and technical education, and into the systems and methods of technical instruction obtaining in other countries;

NOW KNOW YE that by and with the advice of Our Privy Council for Canada, We do by these presents nominate, constitute and appoint JAMES W. ROBERTSON, C.M.G., LL.D., of the City of Montreal, in the Province of Quebec, Esquire; the Honourable JOHN NEVILLE ARMSTRONG, of North Sydney, in the Province of Nova Scotia, Barrister at Law; the Reverend GEORGE BRYCE, M.A., D.D., LL.D., F.R.S.C., of the City of Winnipeg, in the Province of Manitoba, Minister of the Gospel; GASPARD DE SERRES, of the City of Montreal, in the Province of Quebec, Esquire; GILBERT M. MURRAY, B.A., of the City of Toronto, in the Province of Ontario, Esquire; DAVID FORSYTH, B.A., of Berlin, in the said Province of Ontario, Esquire, and JAMES SIMPSON, of the said City of Toronto, Esquire, to be Our Commissioners to conduct such inquiry.

TO HAVE, hold, exercise and enjoy the said office, place and trust unto the said James W. Robertson, Honourable John Neville Armstrong, George Bryce, Gaspard de Serres, Gilbert M. Murray, David Forsyth, and James Simpson, together with the rights, powers, privileges and emoluments unto the said office, place and trust, of right and by law appertaining during pleasure.

AND WE do further by these presents nominate, constitute and appoint the said James W. Robertson, Chairman of the said Commissioners, and Thomas Bengough, C.S.R., of the said City of Toronto, Secretary and Reporter to the said Commission.

AND WE do hereby under the authority of the Inquiries Act, Part I., Chapter 104 of the Revised Statutes of Canada, 1906, confer upon Our said Commissioners the power of summoning before them any witnesses and of requiring them to give

evidence on oath, or on solemn affirmation if they are persons entitled to affirm in civil matters, and orally or in writing, and to produce such documents and things as Our said Commissioners shall deem requisite to the full investigation of the matters into which they are hereby appointed to examine.

And We do hereby require and direct Our said Commissioners to report to Our Minister of Labour the result of their investigation, together with the evidence taken before them, and any opinion they may see fit to express thereon.

In Testimony whereof We have caused these Our Letters to be made Patent, and the Great Seal of Canada to be hereunto affixed.

Witness: Our Trusty and Well-beloved the Honourable Désiré Girouard, Senior Judge of Our Supreme Court of Canada, and Administrator of the Government of Our Dominion of Canada.

At Our Government House, in Our City of Ottawa, this twenty-second day of June, in the year of Our Lord one thousand nine hundred and ten, and in the first year of Our reign.

By Command,
(Sgd.) THOMAS MULVEY,
Under-Secretary of State.

(Seal)
(Sgd.) Girouard,
Administrator.

(Sgd.) A. Power,
Acting Deputy Minister of Justice, Canada.

P. C. 1133.

CERTIFIED *Copy of a Report of the Committee of the Privy Council, approved by His Excellency the Governor General on the 1st June, 1910.*

On a Memorandum dated May 28, 1910, from the Minister of Labour, stating that industrial efficiency is all important to the development of the Dominion and to the promotion of the home and foreign trade of Canada in competition with other nations and can be best promoted by the adoption in Canada of the most advanced systems and methods of industrial training and technical education.

The Minister further states that the Premiers of the several Provinces of the Dominion have expressed on behalf of the Governments of their respective Provinces, approval of the appointment by the Federal authorities of a Royal Commission on Industrial Training and Technical Education.

The Minister recommends that authority be granted for the appointment of a Royal Commission to inquire into the needs and present equipment of the Dominion as respects industrial training and technical education, and into the systems and methods of technical instruction obtaining in other countries; the said Commission to be appointed pursuant to vote No. 477 of the supplementary estimates for the fiscal period ending March 31, 1910, and to consist of the following gentlemen, viz.:—

James W. Robertson, Esq., C.M.G., LL.D., of Montreal, Que., Chairman.
Hon. John N. Armstrong, Esq., of North Sydney, N.S.
George Bryce, Esq., LL.D., F.R.S.C., of Winnipeg, Man.
M. Gaspard De Serres, of Montreal, Que.
Gilbert M. Murray, Esq., B.A., of Toronto, Ont.
David Forsyth, Esq., M.A., of Berlin, Ont.
James Simpson, Esq., of Toronto, Ont.

The Minister further recommends that the said Commissioners be instructed and empowered to pursue their investigations at such localities as may appear necessary, in the Dominion of Canada, in the United Kingdom of Great Britain and Ireland, the United States of America, France, Germany, and, subject to the approval of the Minister, elsewhere on the continent of Europe; also that the purpose of the Commission shall be that of gathering information, the information when obtained to be carefully compiled, and together with such recommendations as it may seem expedient to the Commission to make, published in a suitable report to be at the disposal of the Provinces and available for general distribution.

The Minister further recommends that the Commissioners be appointed under the provisions of the statute respecting inquiries concerning public matters, and report the results of their investigations together with their recommendations to the Minister of Labour.

The Minister further recommends that Mr. Thomas Bengough, of Toronto, be appointed secretary and reporter to the said Commission.

The Committee submit the same for approval.

(Signed) F. K. BENNETTS,
Asst. Clerk of the Privy Council.

LETTERS FROM PREMIERS OF THE PROVINCES

COPIES OF COMMUNICATIONS INTERCHANGED BETWEEN THE HONOURABLE THE MINISTER OF LABOUR AND THE PREMIERS OF THE SEVERAL PROVINCES OF THE DOMINION.

(From the Minister of Labour to the Premiers of the Several Provinces.)

DEPARTMENT OF LABOUR, CANADA,
OTTAWA, December 13, 1909.

DEAR SIR,—The Dominion government is considering the advisability of appointing a Royal Commission to inquire into the needs and present equipment of the Dominion as respects industrial training and technical education, and into the systems and methods of technical instruction obtaining in other countries, particularly in Great Britain, France, Germany and the United States. It is intended that the commission shall be solely for the purpose of gathering information, the information when obtained to be published in a suitable report to be at the disposal of the provinces and available for general distribution.

I may say that the view of the government is that a commission of the kind suggested might render valuable services to the Dominion as a whole, since it would be in a position to conduct an inquiry on a wider and more comprehensive scale than might be considered desirable or possible in the case of the different provinces, and which if undertaken by the provinces individually must lead inevitably to the duplication and reduplication of energy and expense.

It is recognized, however, that the work of such a commission, to be of national service, should have the hearty endorsation of the governments of the several provinces of the Dominion, and I am, therefore, writing to ask if the appointment by the federal authorities of a commission of the character and scope suggested would meet with the approval of your government, and to inquire, in particular, inasmuch as some doubt has been expressed on the point, whether exception to such a course would be taken on any ground of jurisdiction.

Yours faithfully,
(Signed) W. L. MACKENZIE KING.

NEW BRUNSWICK, PREMIER'S OFFICE.
ST. JOHN, N.B., December 16, 1909.

Hon. W. MACKENZIE KING,
Minister of Labour,
Ottawa, Ont.

DEAR SIR,—I beg to acknowledge receipt of your favour of the 13th instant, informing me that the Dominion Government is considering the advisability of appointing a Royal Commission to inquire into the needs and present equipment of the Dominion as regards industrial training and technical education, and into the system of methods of technical instruction prevailing in other countries, specially in Great Britain, France, Germany and the United States.

I entirely agree with the view of the government to the effect that a commission of this kind might render valuable service to the Dominion as a whole, and I have

no hesitation in saying that the appointment by the federal authorities of a commission of the character and scope suggested in your letter would meet with the approval of my government, and no exception would be taken to such a course on any ground of jurisdiction.

Yours very truly,
(Signed) J. D. HAZEN.

OFFICE OF THE PRIME MINISTER AND PRESIDENT OF THE COUNCIL, ONTARIO,
TORONTO, December 16, 1909.

Hon. W. MACKENZIE KING,
Minister of Labour,
Ottawa, Ont.

DEAR SIR,—I have your letter of the 13th instant.

I understand the object of the proposed commission, to inquire into the needs and present equipment of the Dominion as respects training and technical education and into the system of methods for technical instruction obtaining in other countries, will be solely for the purpose of gathering information. This being so, I see no objection to the creation of the commission, and no exception will be taken to it on the part of the province of Ontario.

Yours very truly,
(Signed) J. P. WHITNEY.

PROVINCE OF MANITOBA, PREMIER'S OFFICE.
WINNIPEG, December 16, 1909.

Hon. W. MACKENZIE KING,
Minister of Labour,
Ottawa, Ont.

SIR,—I have the honour to acknowledge receipt of yours under date of December 13th, regarding the advisability of appointing a Royal Commission to inquire into the industrial training and technical education of Canada.

I appreciate the fact that education is a matter under the constitution entirely vested in the provinces and realize that it is a delicate question on which to give advice such as you solicit.

The matter is an important one and I think, in view of the rapid strides along industrial lines that the Canadian people are making, there is necessity for more attention being given to technical education than what has been the practice or custom in the past.

I shall certainly be pleased to see more interest taken in this matter and our young men better qualified for the opportunities that are offered along industrial lines by having a first-class technical education to qualify them for the responsible and important positions that are awaiting men of that quality.

I have the honour to be, sir,
Your obedient servant,
(Signed) R. P. ROBLIN,
Premier.

PRINCE EDWARD ISLAND, PREMIER'S OFFICE,
CHARLOTTETOWN, December, 18, 1909.

Hon. W. MACKENZIE KING,
Minister of Labour,
Ottawa, Ont.

DEAR SIR,—I beg to acknowledge receipt of your letter of the 13th instant regarding the advisability of the Dominion Government appointing a royal commission to

inquire into the needs and present equipment of the Dominion as respects industrial training and technical education and into the systems and methods of technical education obtaining in other countries, &c., with the request that the matter should be considered and approved of by the government of this province, and whether exception to such a course would be taken on the grounds of jurisdiction.

In reply, I beg to say that your proposal meets with the approval of our government, and I wish to assure you that no exception will be taken upon the grounds of jurisdiction. We believe it would be in the interest of the country at large that such a commission should be appointed, and that all possible information be obtained upon a subject of so much importance.

Yours faithfully,
(Signed) F. L. HASZARD.

Executive Council, Saskatchewan,
Regina, December 21, 1909.

Hon. W. Mackenzie King,
Minister of Labour,
Ottawa, Ont.

Dear Mr. King,—I have duly received your letter of December 13, on the subject of technical education and the proposal now under consideration by your government for instituting an inquiry by a royal commission and which asks whether the proposal meets with the approval of the Saskatchewan government and whether any exception would be taken by us on the ground of jurisdiction.

I may very readily state that the Saskatchewan government will raise no objection against the proposed inquiry by the Dominion government on any grounds; on the contrary we believe that the federal government is the proper authority to proceed in the matter in the way proposed; that it is a subject which can be more efficiently, economically and effectively dealt with by the central government than by the various provincial governments; and in addition that, inasmuch as industrial training and technical instruction intimately affect trade and commerce, these branches of education ought to be viewed from the national rather than from the provincial standpoint.

Believe me,
Very sincerely yours,
(Signed) WALTER SCOTT.

Premier of Nova Scotia,
Halifax, N.S., December 23, 1909.

Hon. W. Mackenzie King,
Minister of Labour,
Ottawa, Ont.

Dear Sir,—I beg to acknowledge the receipt of your letter of the 13th inst., on the subject of the advisability of appointing a royal commission to inquire into the needs of technical education.

I would be delighted to see such a commission appointed by your government; in fact, I have long advocated such a course being taken and you can accept my assurance that such a course, if adopted, will meet with the hearty approbation of the government of Nova Scotia.

Yours truly,
(Signed) G. H. MURRAY.

SESSIONAL PAPER No. 191d

PREMIER'S OFFICE, ALBERTA,
EDMONTON, ALTA., December 28, 1909.

Hon. W. MACKENZIE KING,
Minister of Labour,
Ottawa, Ont.

DEAR SIR,—I am instructed by the Hon. Premier Rutherford to acknowledge receipt of your letter of the 13th in reference to the advisability of the Dominion Government appointing a royal commission to inquire into the needs and present equipment of the Dominion as respects industrial training and technical education.

I am directed by the premier to say that this project mets with the hearty endorsation and approval of his government.

Yours faithfully,
(Signed) M. J. MACLEOD.

(Translation.)
OFFICE OF THE PRIME MINISTER, PROVINCE OF QUEBEC,
QUEBEC, December 30, 1909.

Hon. W. MACKENZIE KING,
Minister of Labour,
Ottawa, Ont.

SIR,—I have submitted to my colleagues of the executive council the letter you were kind enough to write to me on the 13th inst., asking me whether the government of the province of Quebec would approve the appointment by the federal authorities of a commission to make an investigation concerning technical instruction in this country.

We are of the opinion, my colleagues and myself, that anything pertaining to public education—whether the subject be special teaching or general teaching—belongs to the provinces exclusively, and I want to write you so, in order that there may be no misunderstanding on that point. As, on the other hand, you give me the assurance that the federal authorities, in instituting a commission of investigation, would simply do it with a view to help the provincial governments, by having collected information which they would later on put at the disposal of the latter, we see no objection to the appointment of such a commission.

Please accept, sir, the expression of my highest regard,
(Signed) LOMER GOUIN,
Prime Minister.

CABINET DU PREMIER MINISTRE, PROVINCE DE QUÉBEC,
QUÉBEC, 30 décembre 1910.

L'honorable M. W. L. MACKENZIE KING,
Ministre du Travail,
Ottawa.

MONSIEUR LE MINISTRE,—J'ai soumis à mes collègues du conseil exécutif la lettre que vous avez bien voulu m'adresser le treize de ce mois pour demander si le gouvernement de la province de Québec approuverait la nomination, par les autorités fédérales, d'une commission chargée de faire enquête sur l'enseignement technique en ce pays.

Nous sommes d'opinion, mes collègues et moi, que tout ce qui touche à l'instruction publique, qu'il s'agisse d'enseignement spécial ou d'enseignement général est du ressort exclusif des provinces, et je tiens à vous l'écrire afin qu'il n'ait pas de malentendu à ce sujet. D'autre part, comme vous me donnez l'assurance que les autorités fédérales, en instituant une commission d'enquête, n'auraient tout simplement en vue que de prêter leur concours aux gouvernements provinciaux en faisant recueillir des

renseignements qu'elles mettraient ensuite à la disposition de ces derniers, nous ne voyons pas d'objection à la nomination d'une telle commission.

Veuillez agréer, Monsieur le Ministre, l'expression de mes sentiments bien distingués.

Le premier ministre,
(Signé) LOMER GOUIN.

CLERK EXECUTIVE COUNCIL.

GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA, PREMIER'S OFFICE,
VICTORIA, January 15, 1910.

Hon. W. MACKENZIE KING,
Minister of Labour,
Ottawa, Ont.

DEAR SIR,—I beg to confirm my telegram to you of January 10th as follows:—

Owing to absence of Minister of Education with whom I wished to confer, regret being unable to reply sooner to your favour regarding technical education. He has now returned and an answer will be sent you promptly.

Having since then had an opportunity of consulting with the Minister of Education, I beg to state that the appointment of a commission by the Dominion to inquire into the subject of industrial training and technical instruction meets with the approval of this government.

It is not the intention of the government of this province to take exception to the course you propose on any grounds of jurisdiction.

I might add that this government will gladly afford any facilities in its power to assist in carrying out the object in view.

Yours very truly,
(Signed) RICHARD McBRIDE.

SESSIONAL PAPER No. 191d

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REPORT OF THE COMMISSIONERS

The Honourable T. W. Crothers, K.C., M.P.
Minister of Labour.

Sir,—We, the Commissioners appointed to inquire into the needs and present equipment of the Dominion of Canada respecting Industrial Training and Technical Education, and into the systems and methods of Technical Instruction obtaining in other countries, most respectfully report to you as follows:—

The Report of the Committee of the Privy Council by which provision was made for the inquiry recommends that the "Commissioners be instructed and empowered "to pursue their investigations at such localities as may appear necessary, in the "Dominion of Canada, in the United Kingdom of Great Britain and Ireland, the "United States of America, France, Germany, and, subject to the approval of the "Minister, elsewhere on the Continent of Europe; also that the purpose of the Com- "mission shall be that of gathering information, the information when obtained to be "carefully compiled, and together with such recommendations as it may seem expedient "to the Commission to make, published in a suitable report to be at the disposal of "the Provinces and available for general distribution."

The Report of the Committee of the Privy Council also states "that industrial "efficiency is all-important to the development of the Dominion and to the promotion "of the home and foreign trade of Canada in competition with other nations, and can "be best promoted by the adoption in Canada of the most advanced systems and "methods of Industrial Training and Technical Education."

We think it will be appropriate that we should state concisely what we conceive to be the duties imposed upon us by the terms of the Royal Commission.

I. We are to gather information, by inquiry into the needs and present equipment of Canada respecting Industrial Training and Technical Education.

II. We are to make investigation of the systems and methods of Technical Instruction obtaining in other countries.

III. We are to carefully compile the information obtained.

IV. We are to express any opinion that we may see fit upon the results of our inquiries and investigations.

V. We are to make such recommendations as it may seem expedient to us to make.

VI. We are to report on these matters to the Minister of Labour; all to the end that industrial efficiency may prevail for the development of the Dominion and for the promotion of the home and foreign trade of Canada in competition with other nations.

In pursuing our inquiry in Canada, we had the advantage of carrying on our work with the fullest concurrence and co-operation of all the Provincial Governments.

The Workers and Industries.

The inquiries included a survey of the needs of the workers in,—

1. Manufacturing and other industries such as: building construction; boots and shoes; carriages and wagons; chemicals; clothing; electrical; food stuffs; furniture; leather and rubber; metals, including rolling mills, foundries, machine shops, and machinery in general; printing and publishing; textiles and clothing; wood, and wooden wares; other industries and trades.

2. Agriculture, live stock, dairying, fruit culture; fisheries, mining, including quarries; forestry.

3. Commerce and transportation.

4. Home-making and housekeeping, including house sanitation, domestic servants, care of children.

We obtained much information regarding the general conditions of industry and labour in Canada, having regard to, (*a*) the growth of businesses; (*b*) where products are marketed; (*c*) where raw materials are obtained; (*d*) supply of labour, skilled and unskilled and apprentices; (*e*) child labour.

Many witnesses, some of whom had attained eminent and important places in industrial, commercial and agricultural work, gave us valuable information regarding their personal training and education. They freely expressed opinions as to its suitability, or wherein and how it might have been different with benefit to themselves and advantage to the industries and community.

The conditions under which the workers earn their wages and live out their daily lives as citizens are important factors in industrial efficiency, which, to a very considerable extent, is based upon and arises from the way in which the workers spend their leisure hours. Efficiency depends also on whether they work and live under wholesome conditions, or under conditions which depress their physical vitality and leave them less vigorous as workers, less satisfied as citizens and less useful as members of the race.

The Present Equipment.

The inquiry into the present equipment of the Dominion respecting industrial training and technical education was directed to ascertain the facts in relation thereto at or in connection with:—

1. Universities and colleges.

2. Technical schools.

3. Trade schools.

4. Agricultural and extension work.

5. Normal schools and training of teachers.

6. High schools, academies and collegiate institutes, (*a*) elementary science; (*b*) rural science; (*c*) manual training; (*d*) domestic science.

7. Elementary schools, (*a*) manual training; (*b*) domestic science; (*c*) rural science, including school gardens and nature study.

8. Evening schools (*a*) elementary; (*b*) technical.
9. Correspondence courses.
10. Apprentice schools.
11. Organized play and playgrounds.
12. Physical culture and drill.

Attention was given also to the need of and the provision existing for research work.

An interim statement, which contained a summary of our work in Canada, was submitted on March 28, 1911. A copy of it is annexed hereto.

The information gathered in that part of our inquiry was definitely useful in preparing for the work that lay before us in other countries.

The full report of our inquiry into the needs and present equipment of the Dominion is submitted herewith as Part IV of this Report.

Cordiality of Reception in Other Countries.

After completing the investigation in Canada the Commission proceeded to England, Scotland, Ireland, Denmark, France, Germany, Switzerland and the United States to inquire into the systems and methods of technical instruction in those countries.

In the United Kingdom the Rt. Hon. Walter Runciman, President of the Board of Education, Lord Pentland, Secretary of State for Scotland, and the Hon. Thomas Russell, Vice-president of the Department of Agriculture and Technical Education for Ireland, met us and extended every official courtesy, with offers of assistance from the higher officials in their departments. The Commission was greatly indebted to those officials for information as to where and how we could best see and learn what we were required to inquire into.

Among others who rendered us most friendly and valuable help in the United Kingdom, were Sir Robert Morant, Secretary of the Board of Education, and many of the officers of the department, particularly Dr. Frank Heath and Mr. A. E. Twentyman, Librarian. Sir John Struthers, head of the Scottish Education Department, favoured the Commission with a conference on the progress of the efforts for industrial and technical education in Scotland. Mr. Robert Blair, chief Education Officer for the London County Council, gave the Commission valuable and extensive assistance. He arranged for the Commission to be accompanied during its visits to technical institutions in London by inspectors who were fully conversant with what was being attempted. Mr. T. P. Gill, Secretary of the Department of Agriculture and Technical Instruction for Ireland, and other officers of the department, accompanied the Commission during its journeys in Ireland.

By the kindness of Lord Strathcona, the Rt. Hon. Lewis Harcourt, Secretary of State for the Colonies, received us and arranged through the Foreign Office for letters to the Ambassadors and other representatives of the British Government in the countries on the continent. Through them, permission was obtained from the State Education Authorities to visit schools and other institutions. The British representatives at the capitals of foreign countries extended not merely the official and routine formality of introductions, but personal attention in assisting the Commission to

meet men and see institutions with full opportunity to learn from them.

When the Commission returned to the United States it was received at Washington by the Hon. James Wilson, the veteran Secretary of Agriculture, under whose administration great extensions of government work for the improvement of agriculture have been made.

The Commission was fortunate in the conditions under which it pursued its investigations. We were received in all countries and places with the utmost cordiality by the heads of departments, members of education authorities, principals of institutions and teachers, who were frankly communicative. We were not regarded as troublesome travellers to be got rid of as quickly as possible. After official permission to visit a school or other institution had been obtained our difficulty was not to gain admission but rather to tear ourselves away within the time which could be allotted to it. There was so much to see and the director or other teacher had so much to show and tell that the hours and days went all too fast.

Increase of Interest in Education.

We are constrained to record our tribute to the character of the men and women who are responsible for the organization and administration of education and of the head-masters and other teachers who carry on the class work. Courtesy, enthusiasm and ability of a high order were to the front. In them the profession of teaching is being recognized more and more as one of honour and social importance.

New buildings and equipment for technical instruction were found everywhere in evidence. The awakening of interest in this field of education in England has brought out much rivalry between different cities as to which should have the finest institutions for its young people. Nor are the attention and interest mainly devoted to the material equipment; the effort is focussed on the boy or girl, particularly between the ages of 14 and 18.

Throughout the countries visited, Continuation Classes, Technical Classes and Art Classes have become prominent features of the educational work on behalf of most of the children whose attendance at the ordinary school ends with their 14th year. For example, in the city of Halifax, England, 60 per cent of all the boys and girls who leave the Elementary Day Schools continue their education at Evening Vocational Classes and Technical Day Courses. Many other cities in England and Scotland secure attendance almost equal to that attained at Halifax. In the city of Manchester it is claimed that 3·9 per cent of the whole population of the city attend some form of Continuation and Vocational Schools while between the ages of 14 and 18.

In four-fifths of the States of Germany, for the whole State or in some States for only cities of over 10,000 population, attendance at continuation classes of some sort is compulsory between 14 and 17 years of age.

Comparing a German city with one in England or Canada one is struck by the absence from the streets in the evening of the youth of both sexes standing on street corners or wandering aimlessly about. The Vocational Classes for all sorts of workers between the ages of 14 and 17 have evidently given the people generally a liking for and satisfaction from attending classes after the ordinary elementary school days

are over. We were told that when compulsory attendance was first required by Government action there was a good deal of hostility on the part of some employers and on the part of some of the youths themselves. After two years of experience of the classes most of the opposition disappears. Now compulsory participation in some form of educational work during the adolescent age is accepted as part of the country's civilization.

An example: In visiting an apprentices' class in one of the Continuation Schools in Switzerland we asked the lads, who had attended for two years under the compulsory regulations, to vote as to whether they would attend without the compulsory requirement. Out of a class of 31, thirty voted that they would attend voluntarily and only one did not vote. The teachers' opinion was that not more than one-third of those in that particular class would have begun to attend the Continuation School without the compulsory requirement.

Most Advanced Least Satisfied.

Notwithstanding the manifold evidences of progress in this new field of educational effort in England, Scotland and Ireland, one seldom hears any laudation by the people themselves of what they are doing. The refrain of nearly every comment on the educational work in England, by an Englishman, is lamentation at its backwardness compared with that of Germany. The Commission could not fully share that feeling after being over Germany and other European countries.

There was not in Germany, any more than in England, any evidence of brag or self-satisfaction. Capable men explained to the Commission the aims of the several systems and methods which were in use, and pointed out what they regarded as the weaknesses and failures of past efforts, while they dilated upon their hopes and desires for the future. Perhaps in Germany, more than in any other country, we were impressed by the apparent solidarity of the feeling of citizenship and by the fact that education did not seem to be planned or cherished as a means whereby the individual got ahead of other individuals. Education appeared to us to be regarded as a great national service whereby all the individuals are being trained towards ability for their respective occupations in the interest of the State. The personal power and wellbeing of the units of the community are looked after for the sake of the State.

'Conversations' with Leaders in Education.

In all the countries visited by the Commission, men and women who are recognized as great leaders in educational movements discussed with us, with frankness and fulness, not only the systems and methods which at present prevail in their countries, but also the problems which face the different central and local authorities, and the plans and efforts which are being made to meet existing conditions. A feature of the Report that will be of uncommon interest and value is the information obtained and reported on as "Information obtained in 'Conversation' with" these men and women. They had knowledge and ability to express clear opinions which had been ripened out of their endeavours to meet the circumstances and discharge the duties in connection with their own work in the several countries in which they labour.

COMPILATION OF THE INFORMATION.

In compiling the information obtained in other countries, we have been guided to a large extent by what we learnt as to the needs of Canadian workers and Canadian occupations and industries.

An effort has been made, (1) to arrange the information from each country in such a way as to show the relation of Industrial Training and Technical Education to the general system or systems of education in that country, and (2) to report with some fulness of detail upon the systems and methods, the institutions, courses and classes which seem most likely to furnish information that will be useful to Canada.

The result of that part of our inquiry is submitted in Part III of our Report.

The information and considerations on which the opinions and recommendations of the Commission are based are set forth at length in Parts II., III. and IV. of the Report.

The subjects dealt with in the several chapters of Part II. are as follows:—

I. Elementary education in relation to industrial training and technical education.

II. Secondary and higher education in relation to industrial training and technical education.

III. Manual training, nature study, school gardening, household science, vocational education, industrial training and technical education.

IV. Industrial training and technical education in relation to national problems.

V. Industrial training and technical education in relation to the needs, duties and rights of individuals.

VI. Organization and administration of industrial training and technical education for Canada.

Section (1) The practice in different countries.
" (2) The correlation of courses of study to occupations.
" (3) Influence of text-books and examinations.
" (4) Methods of instruction.
" (5) Qualifications and training of industrial and technical teachers.
" (6) Scholarships and fees.
" (7) Correspondence-study courses and travelling instructors.
" (8) Some recommendations regarding organization and administration for Canada.

VII. A Dominion Development Policy, with recommendations of provisions,—
(1) For those who are to continue at school in urban communities;
(2) For those who have gone to work;
(3) For rural communities.

VIII. Industrial training and technical education in relation to apprentices, foremen and leaders.

IX. Education for rural communities.

X. Schools for housekeeping occupations.

XI. Industrial research.

XII. Vocational guidance.

XIII. Wider use of the school plant.

XIV. Compulsory attendance at Continuation Classes after fourteen.

PART I

We think it appropriate and convenient to submit at this place a statement of the principal opinions which the Commission deems it fit to express, and of the recommendations which the Commission makes. We do that by assembling extracts from the aforementioned chapters of Part II. and Chapter IX. of Part III.

EXTRACTS FROM CHAPTER I OF PART II.

ELEMENTARY EDUCATION IN RELATION TO INDUSTRIAL TRAINING AND TECHNICAL EDUCATION.

At many of the places visited the local committee or other representative body, to whom the Commission was indebted for opportunities to learn what was being done in industrial training and technical education, first guided the Commission to an elementary school to show the character of the hand work which was provided for. That was the case more generally in Europe than in Canada. Out of that experience grew the conviction that a report on industrial training and technical education would not represent fairly what was being done unless it included at least a brief statement concerning the pre-vocational or trade-preparatory parts of elementary education.

Some Conclusions.

From the testimony received it appears highly desirable in the interests of vocational efficiency,—

(1) That all children to the age of 14 years should receive the benefits of elementary general education up to at least the standards provided by the school system of the place or province where they live;

(2) That the experiences of the school should tend more directly towards the inculcation and conservation of a love of productive, constructive and conserving labour;

(3) That, after 12 years of age, for the children whose parents expect or desire them to follow manual occupations, the content of the courses, the methods of instruction and the experience from work undertaken at school should have as close relation as practicable to the productive, constructive and conserving occupations to be followed after the children leave school.

The Commission is further of opinion,—

(4) That benefits from such pre-vocational education would accrue (*a*) from the interest awakened in manual occupations; (*b*) from the discovery through their

experiences at school to the pupils themselves, and to the teachers and the parents, of the bent of their abilities and aptitudes; and (*c*) from the taste and preference thus developed leading the children to follow skilled occupations for which they are suited;

(5) That further advantage would result because the interest which this form of education would arouse in the children would dispose them to desire further education after they had begun to work and cause them to keep in touch with educational effort in some form;

(6) That the time and attention devoted to pre-vocational or trade-preparatory work in no way detracts from or hinders progress in general education of a cultural sort.

Important Considerations.

The kind and amount of industrial training and technical education which an individual is able to take up and profit by is determined to a large extent by the previous general education. General education is here taken to mean the formal studies in reading, writing, drawing and arithmetic, together with the experiences got from association with others in work, in play and in social intercourse, which have developed the powers of mind and body and have furnished the knowledge possessed by the individual.

Those who have this elementary general education in hand will best provide for subsequent vocational efficiency by ever bearing in mind the following propositions:—

I. It is important that health should be protected and preserved.

II. It is important that the harmonious growth of the powers of body, mind and spirit should be fostered.

III. It is important that the senses, the avenues of impressions whereby knowledge is acquired in the first instance, should be trained.

IV. It is important that ability and desire to work and play with enjoyment, intelligence, skill and energy should be developed.

V. It is important that good habits should be formed, particularly habits of obedience, courtesy, diligence and thoroughness.

VI. It is important that proper standards of conduct and character should be maintained and that high ideals should be followed.

The schools of Canada accomplish much towards these ends, but in order that their pupils may be prepared to profit to the fullest extent by industrial training and technical education, the evidence which has been received by the Commission requires us to submit the following suggestions regarding general elementary education, for its improvement, extension, enlargement and enrichment.

Provision should be made for,—

1. Training of the senses and muscles.
2. More and better drawing.
3. More physical culture.
4. Nature study and experimental science.
5. Pre-vocational work.
6. More and better singing.
7. Organized and supervised play and games.

Relief of the Time-table.

It is to be remembered that these suggestions do not imply the introduction of any new subjects into the course of study. The relief of the time-table from the pressure of a multiplicity of separate subjects as such is an evident necessity. The work of the school day should gradually be arranged less and less on subjects as such and more and more on occupations, projects and interests, each of which would form a centre for the correlated study of several subjects such as reading, composition, number work, writing and drawing.

These branches of education, which are here recommended, are reported upon as observed in schools in other countries. The branch of Manual Training is mentioned here as illustrative of the influence of all the others.

Manual Training.*

It is now generally admitted that Manual Training work should have a recognized place in the course of study from the Kindergarten until about the 11th or 12th year of age, for cultural or self-realization purposes. After that the 'Manual Training' (the term is used to represent all the others) might be directed more definitely towards discovering aptitudes and tastes and developing skill and ability for some occupation.

The proportion of time devoted to work involving manual activity varies a great deal. No one rule can be adopted with advantage in all schools for all classes of pupils, but the tendency is towards not less than a quarter of the time in school from the Kindergarten up to the age of 12 being devoted to some form of handwork, in correlation with the other studies and subjects.

The arguments which have been used in favour of Manual Training have some resemblance to those which are urged on behalf of Industrial Education. They both plead for a fuller recognition of motive, as it appeals to the pupil in school work, and a better adaptation of the course of study to the large majority of the pupils in the hope of accomplishing thereby the reduction of the numbers who leave school before the completion of the elementary courses and the development of ability for industrial life.

Manual Training, or 'Hand and Eye' training has particular value in the biological function of education. It is a means of developing the sense organs and of training faculties and powers to meet the things and forces of the outer world with intelligent discriminations. Whether this results in an increase of brain power is a question elusive of proof. The evidence, however, is clear that it adds to the happiness of the pupil, causes the knowledge which he acquires to be retained and available for use, and quickens the rate of his progress in other school work.

Further Conclusions.

The Commission is of the opinion,—

(1) That education should have regard to the growth of the powers of the body, mind and spirit concurrently, and that it should have regard to the preparation of

* From chapter III.

the pupil for later life as an individual, as a working earner, as a citizen and as a member of the race;

(2) That education should be provided of a kind suitable to meet the needs arising from the changes in the nature and methods of occupations, the manner of living and the organization of society;

(3) That existing institutions, in so far as necessary, should be modified or altered and have additions made to the courses of study or kinds of work taken up;

(4) That the preparation of teachers for the new and different kind or kinds of education is a first necessity and duty in order that they may be qualified to do the new work successfully;

(5) That such improvement, extension, enlargement and enrichment as have been indicated would let the school experiences become a reasonable preparation for beginning working life and entering upon Industrial Training and Technical Education; and that without such preparation no system of Industrial Training and Technical Education can, to any considerable extent, be permanently successful.

Some Recommendations.

The Commission is of opinion that the teaching of drawing, manual training, nature study, experimental science and pre-vocational work including domestic or household science in elementary schools, is of great importance and value and should be provided for generally.

Having regard to the cost of carrying on these branches in the elementary schools, until teachers are available who themselves have been taught them during their school days, and bearing in mind that such school work was not contemplated as part of public education at the time of Confederation when the Provinces accepted the responsibility of legislating for the maintenance and control of education within their borders, the Commission ventures to recommend that a fund be created from which payments would be made to the provincial governments during a period of ten years.

The Commission suggests that such a fund should receive not less than $350,000 a year for ten years from a Dominion parliamentary grant; and that it should be divided into nine portions, in proportion to the population in each of the nine provinces as determined by the latest census, and allotted to each province accordingly.

The Commission further suggests that there should be paid to each province from said fund (if and when the amount to its credit in said fund is sufficient therefor) an amount not exceeding 75 per cent of the amount which such province had paid, during the immediately preceding fiscal year, for the promotion and support of drawing, manual training, nature study, experimental science, and pre-vocational work, including domestic or household science, but not including the provision of buildings.

It would appear to the Commission that a certificate by the chief education officer of any province, setting forth in detail the places, the work done and the sums paid by the province in furtherance of these branches, should be regarded as satisfactory evidence of the amount earned by said province.

Any portion of the fund allotted to a province which may remain unpaid or unearned at the expiration of any fiscal year should be carried forward and remain in the fund for said province until earned.

EXTRACTS FROM CHAPTER II OF PART II.

SECONDARY AND HIGHER EDUCATION IN RELATION TO INDUSTRIAL TRAINING AND TECHNICAL EDUCATION.

Secondary Schools.

A common criticism levelled against secondary education in Canada has been that the secondary school has tended to give the youths a distaste for manual labour and has dulled any inclination towards skilled handwork from want of opportunity to develop ability in that direction; also that it has been organized and conducted chiefly to prepare for the colleges and learned professions and does not give good preparatory training for the life and occupations of those who have to leave school at about 16 or 18 years of age.

Another criticism has arisen from the fact that the kind of education offered in the secondary schools of Canada has not been such as to appeal to the large number of boys and girls who are rather slow, or have little ability or interest, in exclusively book or theoretical studies or subjects, but who have intellectual interest and power in productive and constructive work. Experience has indicated that many youths, who are negligent, uninterested and unsuccessful in book studies and purely theoretical subjects are attentive, diligent, interested and successful in construction and expression work calling for skill of hand, closeness of observation, exercise of judgment, initiative and co-operation with their fellows.

Secondary education in Canada has been almost entirely of a sort which occupies the whole time of those receiving it. In other countries secondary or supplementary education is carried on while the young people are actively engaged in gainful occupations and following employment or learning a trade which will serve them in mature years. For example in the co-operative industrial schools of the United States, young men from 15 years of age upward attend high school and workshops, where they are employed, week about. In the continuation schools of Germany the young people engaged in gainful occupations attend continuation schools from four to ten hours per week. In several states in Germany the attendance at the school must be over before seven o'clock in the evening. Frequently the employers arrange to let the young workers free to attend the school in the morning or during the forenoon when they are fresh and most able to profit by the opportunities they have.

Industrial Training and Technical Education of College Grade.

The Commission found itself unable to make a complete study of technical education of university and college grade. It directed its inquiries in this respect almost entirely to a study of the effects of the highest forms of technical education upon progress in industry and trade, and did not attempt a thorough examination of the organization of institutions or courses of study. In France, Germany, Switzerland and the United States, the power and influence of technical education of the highest types appeared to be greater than in the United Kingdom or in Canada. In England

the opinion most frequently heard—and it was earnestly urged—was to the effect that hereafter the industries must somehow secure the services of more men of the highest scientific attainments with thorough technical training, or her manufacturers and merchants will not be able to hold their own against foreign competition.

The faculties of applied science of colleges and universities in Canada have the reputation of preparing engineers for professional work in a thorough and satisfactory manner. From what was learned abroad the opinion appears to prevail that students in technical colleges, at some time before they graduate, should have obtained experience with materials, tools, machines and products for the purpose of giving them a clear understanding of principles and a correct knowledge of the conditions of production and construction which prevail in shops and factories. It is not important that they should have enough practice to develop either skill or speed as workmen in manipulative labour.

Some Conclusions.

The Commission is of opinion that:—

(1) Secondary Vocational Education should be provided for those persons who are to follow manual industrial occupations, producing occupations such as agriculture, conserving occupations such as housekeeping, and commercial and business occupations.

(2) Such persons should have opportunities for acquiring secondary education which would be as fully advantageous to them in their vocations as the secondary education provided in the general school system has been advantageous to those who enter the learned professions, other professional occupations, or the leisure class.

(3) Secondary education for those who have gone to work should be provided in day and evening classes in close correlation with their occupations while they are still learners, as apprentices or otherwise, and also when they have become skilled workmen or journeymen, or have come to fill positions as foremen, superintendents or managers.

(4) Technical education for the preparation of technical engineers, and other persons being trained for professional work of a grade and rank similar to theirs, would be improved by further extensions in the directions indicated by the practice in Germany and at the University of Cincinnati. This applies particularly to the education of such men as might become principals and teachers in the middle technical schools and technical high schools in Canada. The Commission commends the consideration of this matter to the authorities of the technical colleges in the belief that they alone are qualified to render a final decision in regard to it.

The universities and colleges are providing technical courses to meet the demands from an increasing number of students. The rapid growth and development of the country, and the further application of science and scientific methods to all forms of production, construction, conservation and administration, will call for still larger numbers of graduates. In consequence the universities and colleges are sure to require increased financial support. The Commission is of opinion that this should be provided from some source without causing the fees required from students to be so high as to exclude suitable young persons who may seek the highest grade of technical instruction.

EXTRACTS FROM CHAPTER IV OF PART II.

INDUSTRIAL TRAINING AND TECHNICAL EDUCATION IN RELATION TO NATIONAL PROBLEMS.

The National Heritage.

Self-governing peoples grow ever stronger when they are animated by some dominant purpose to maintain their ideals by further achievement. The reputation of Canada is a matter of concern; its character is of much greater consequence. Its place of honour, influence and power among the nations is worth caring for; the kinds of training and instruction which determine the abilities and qualifications of its young people for working and living are of supreme importance.

Towards the end of the last century Canadians began to find themselves as a united nation of agricultural, industrial, fishing, mining, commercial and professional workers and home-makers.

Never before in the history of the race did seven millions of people have such a heritage come into their free possession. If the area of Europe is eleven, that of Canada is twelve, and much of it destined to be the setting of good homes of a robust people. Where else can be found a better place for homes for a people moved by the dominant purpose to win their way up by the strength of intelligent labour, justice and good-will, and to bring up with themselves all who may come to them?

The best that Canada has inherited is the quality of her life. The more immediate ancestors of the present generation loved liberty, cherished justice, and prized intelligence. These they had won by courage, by struggle, by patience and by privation. They left them to be improved by education.

Occupations Call for Constructive, Conquering Qualities.

Occupation conserves the best that humanity has achieved. Canada is happy in occupations that minister to greatness in character. A new country needs the constructive and conquering qualities as well as the sedentary, absorbing, remembering capacities.

While the industrial development of Canada has been going on in a recognized and prodigious way in the large cities, there has been a concurrent development in the smaller places. In these latter particularly, the interests of the surrounding rural population, through its surplus of workers and through business and social intercourse, are tied up closely with the industrial progress of the towns.

Better Training Needed.

Adequate training for the young, and appropriate instruction, under opportunities suited to the conditions, are needed and wanted everywhere for all industrial workers and industries.

Making homes is much more than building houses and providing furniture, food, clothing and things. It is creating a temple, not made with hands, as a place of culture for the best in human life.

Teaching and training the young is much more than instructing them in the arts of reading, writing and reckoning—those flexible, useful tools of the intellect. Much of the time of the school has been consumed in these tasks; but one already sees in Canada the dawn of a happier day when those arts will be acquired joyfully by directed educational play instead of painfully, reluctantly and with difficulty as separate school subjects. Then a larger portion of the time and efforts of the teachers may be devoted to caring for the health and the habits and the standards of the pupils while watching and directing the development of their powers of body, mind and spirit.

Canada is Behind the Times.

Until recently Canada was an interested and debating spectator of the movements for industrial efficiency. The training of young workers to deftness in manipulation and technique, and to an understanding of the principles and sciences which lie at the base of all trades and industries, was not provided for in the courses. When manufactured goods were wanted in increasing quantities and variety, and towns and cities were growing by leaps and bounds, it was discovered that there had been practically no organization of means for preparing the hundreds of thousands of young people to become the best qualified artisans, farmers and housekeepers in the world. The country's growing wealth was ample for the cost; but the educational work was becoming bookish in the extreme, and, worse than that, was developing into school systems that had few points of contact with or relation to industrial, agricultural, or housekeeping life. When boys and girls grew restless at prolonged book work, few schools provided anything in the way of tools, materials or time for 'fads,' as manual training, nature study, school gardens and housekeeping subjects were called. The deep of the ages in human life was calling to their complex instincts and aptitudes, but the schools turned a dull ear, and most of the boys left as soon as they could.

The Way of National Progress.

Further advances are to be looked for through such means as these: First, those which lead young people to the achievement of joy through the processes of labour as distinguished from its wages or other rewards. Secondly, those which produce the pleasure of working together for some end believed to be good for all. Pupils and students may work themselves into industrial and social efficiency, by co-operating in productive labour, as well as play themselves into ability by means of team games. Both together are better than twice as much of either alone. Thirdly, those which yield gladness through creative, constructive, conserving work whereby each individual strives to give expression to his own concepts of utility and beauty in concrete things as well as in words and other symbols.

All life is an unceasing struggle. The point is to choose the right objects and means. In the past Canada has been winning all along the line, with an occasional

setback. Her warfare is ever against ignorance, helplessness, poverty, disease, vice and ill-wills. Industrial and technical education is to train individuals for that warfare. Its endeavours are most successful when the experiences, which it provides for each individual, are in themselves a vital part of the hard campaign. It must ever vary its strategy and tactics and weapons, as the field of operations is moved forward. The need of the times is education to qualify all to achieve satisfaction through labour and service and good-will.

General Education Crowned by Industrial Training.

Industrial training and technical education serve to supplement general education and give to it a finishing course of experiences with special reference to the requirements of workers in industries, agriculture, housekeeping, commerce, transportation, mining and other occupations. They are means whereby the individual, the family, the community and the nation seek to develop the powers of the individuals for work, to prepare themselves to meet the conditions of working life, to alter these conditions in directions which seem desirable, and to conserve what is esteemed to be worth while out of the past in knowledge, customs, methods, institutions, standards and ideals.

The State and the Individual.

The interest of the State, as such, is that the individuals who compose it should be healthy, intelligent, capable, animated by goodwill towards their fellows and that they should be able and willing to fill their places in the community, as citizens discharging their duties and preserving their rights, as indviduals in the economy of life, and as earners contributing to the material prosperity of the State.

The problem of finding an occupation suitable to the personality of the individual, and of preparing the individual to follow it with satisfaction and with benefit to the community, is ever present and becoming more complex and difficult.

So far as the individual is concerned, education is required for the preservation of health, the development of powers, the increase of knowledge, the maintenance of justice and liberty, and the strengthening of desire and will-energy to give effect in everyday life to the concepts of duty, truth, beauty and goodness.

The National Depends on the Individual.

Every national problem can be dealt with to the greatest advantage by intelligent and capable men and women. Intelligence and ability are fruits of education limited in extent according to the measure of inherited capacity, personal diligence and accessibility of opportunities. Training and instruction in some form are the chief means for conserving and developing the powers, capacities and characters of individuals.

As the powers and influence of individuals in matters of government—local, provincial and Dominion—become greater it becomes correspondingly necessary that each and all should have the kind and amount of education which will enable and cause them to live and work better because of it than if they had not had it.

Some Conclusions.

In consequence it appears to the Commission that Industrial Training and Technical Education should be provided:—

(1) In order that the interest of boys and girls in their own training and instruction might be increased and an understanding of their relation to working and living might be clearer to themselves from twelve years of age onwards.

(2) In order that the period of authoritative supervision, and of organized education to the extent of at least half a day per week, should be prolonged during adolescence, and that boys and girls should themselves desire those advantages until the age of seventeen or eighteen years.

(3) In order that all might become qualified to the full extent of their capacities to fill their places as individuals, as contributing earners, as citizens and as members of the race.

(4) In order that the nation as a whole might be more intelligent, capable and prosperous, and more united in its efforts to meet national problems and solve them wisely as they come.

The Commission holds that the large inclusive aim of Canada is that her people shall be great in character and ability, even great enough to match the matchless heritage that has come to her in blood and ideals, in possessions and institutions, in opportunities and obligations. The greatness of her composite races will come through the perfecting of the finest of all fine arts—the fine art of living happily and prosperously together *while working with intelligent skill and unfaltering will* for ends believed to be for the common good. Industrial Training and Technical Education are among the means to that end.

EXTRACTS FROM CHAPTER V OF PART II.

INDUSTRIAL TRAINING AND TECHNICAL EDUCATION IN RELATION TO THE NEEDS, DUTIES AND RIGHTS OF INDIVIDUALS.

The Unit in Civilization.

Under modern conditions the term civilization is commonly used as a bland, omnibus word to indicate the forms of organization and effort employed for the achievement of the main aims and ideals which animate and dominate a people for the time being. At present the objects are obstrusively commercial and industrial. The forms themselves are ever changing, while the inner force which uses them persists. The inner power of the people expresses itself progressively in human qualities and social and economic conditions.

In the struggle of modern industry to produce goods cheaply in order to make profits, three elements are of importance—raw materials, labour-saving machinery and organization. These three receive so much attention that sometimes the conditions of and results upon the individual workers are entirely lost sight of. The most im-

portant asset in any State is the value of the individual citizens themselves. While the conservation of natural resources and the promotion of industries are important and the development of trade has possibilities of benefit, the conservation of life and ability in the individual workers is supreme. Next to that comes the provision for conservation of opportunity for satisfactory employment.

More Service Required from the School.

The evolution of the school has been as notable as that of any other institution. The elementary school, which came in first to supplement the training and instruction which the boy and girl received in helping their parents, has been left to accomplish nearly the whole task from six to fourteen. The demand is everywhere insistent that the schools shall meet the larger duties which are now thrown upon them by the changed social and industrial conditions.

Personal Welfare and State Prosperity.

It becomes more and more evident that education must have a vocational aim and result if the industrial activities of the people are to be of benefit to all the individuals and to the State which they constitute. It must be kept in mind that the first and chief object of industrial training and technical education must be the personal welfare of the individuals who are to participate in it; second, the prosperity and strength of the State; and, third, the advancement and improvement of industry as such, and that only as consistent with and subordinate to the other two.

In the organization of this form of education, the attempt must be made to meet all the needs of all the people, with care that none shall be debased by the occupations for which they are prepared, and none shall be debarred from earning satisfaction, as well as satisfactory wages, from labour.

Some Conclusions.

In the opinion of the Commission it is important:—

(1) That workers in factories whose main task is to attend or operate machines should receive instruction and training which would develop some all-round power and skill, widen their knowledge and increase their interests beyond the routine of automatic operations. By such means industrial activity would minister to the development of human life instead of subordinating it to the gain of profits without concern for the well-being and happiness of the individual workers.

(2) That such training should be provided as will conserve and develop occupations wherein skilled handicraft is required,—this for the sake of the workers as well as for the quality and character of products of certain kinds.

(3) That the interests of the rural population should be conserved and promoted as far as possible by Industrial Training and Technical Education suitable to the needs of its workers.

(4) That the needs of girls and women for organized instruction and training in the elements of the sciences and arts, which underlie successful housekeeping and

home-making under modern industrial conditions, should be recognized and provided for. The housekeepers and the homemakers are always the mainstay of advancing civilization.

(5) That increasing attention should be given to opportunities, which now exist or which may be provided, for the conservation of life and health and for the development of human powers to the end that individuals generally may attain happiness, prosperity and contentment through intelligent labour in Canada.

EXTRACTS FROM CHAPTER VI OF PART II.

ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL TRAINING AND TECHNICAL EDUCATION FOR CANADA.

Statement of Aims.

The aims of industrial training and technical education are arranged here in an order of importance for the guidance of those who plan the courses and kinds of work to be done:—

1. The preservation of health and the vigour of life.
2. The formation of good habits.
3. The development of the sense of responsibility and duty.
4. *The preparation of the body, mind and spirit for following some useful occupation.*
5. *The cultivation of the mental powers, the acquisition of knowledge and the development of the scientific spirit with direct reference to the occupation.*
6. The promotion of goodwill and desire and ability to co-operate with others.
7. The maintenance of standards and ideals.
8. As all-inclusive and ultimate, the perfecting of the human spirit, the improvement of the quality of life itself and the betterment of the conditions of labour, leisure and living.

Means Towards Attainment.

The full results of Industrial Training and Technical Education are to be sought through,—

1. The discipline which comes from interest in work and from co-operation with others in educational classes to at least 17 years of age;
2. The conservation of the love of work and of satisfaction in doing it well;
3. The acquisition of technical scientific knowledge, and the development of the scientific spirit;
4. The preservation and strengthening of a spirit of willingness to accept and fill one's place in organised society which implies relative positions and relative degrees of authority.

The acquisition of mere trade or craft skill is only one of the means which in education can be made helpful for reaching the larger ends. General education also

promotes these ends; and there need be no essential difference between the aims of Industrial Training and Technical Education and those of general education. The main distinction is in the narrower field and more direct methods by which Industrial Training and Technical Education seek to provide qualification for the working or earning part of life's activity.

The Ground to be Covered.

In the opinion of the Commission, it is important:—

1. That the needs of the individuals for knowledge, ability and skill in their vocations or occupations should be considered in all the courses of study and methods of education which are provided at public expense;

2. That from 12 years of age and onward the general and cultural education should include adequate vocational education;

3. That while the ultimate or ideal end should be kept in mind the immediate effort should be directed to meet successfully the most pressing needs of existing conditions;

4. That the effort should be directed to provide,—

(*a*) An adequate supply of competent instructors, as well informed and as well trained as practicable, to carry on the work which may be attempted;

(*b*) Courses of study and work in the several classes or institutions which would help the individual workers in connection with their occupations and thereby utilize the interest aroused to keep them in touch with educational effort and influence for development of the more purely mental qualities and moral powers;

(*c*) Such a system as can be most advantageously connected with the existing systems of education and existing institutions, classes and efforts.

The Commission does not recommend that the effort should be directed mainly to make Industrial Training and Technical Education fit in with the existing systems of education, existing institutions or classes, but rather to secure, as far as practicable, the co-operation of all the educational interests, in order to ensure progress in the most effective way in the shortest time and with the greatest benefit to the pupils.

The Commission would regard it as a misfortune if the aims, systems, institutions, classes or methods of different parts of education should be made to clash with each other. So long as the dominant purpose is to direct them all towards the real benefit of the pupil, of the community and of industry, they converge towards or radiate from a common centre and do not lose effectiveness and power by mutual oppositions.

The problem is not to subordinate one to an other, but to provide for all. The special aim of Industrial Training and Technical Education should not be permitted to obscure or dominate the whole aim of education, which for the individual is the perfecting of the spirit and the development of all the powers of body and mind.

The Underlying Principles.

The Commission is of the opinion that, Industrial Training and Technical Education in order to be of greatest benefit to individuals, to industrial development, to localities, to the several provinces and to the Dominion as a whole, should be organized and maintained in accordance with the following principles:—

1. It should be under provincial control and regulation.

2. It should receive financial support from individuals, from local authorities, from provincial governments and from the Dominion.

3. Provision should be made for active participation in its control, management and direction by individuals in the locality who would represent industries as employers and employees, agriculture, women's occupations particularly housekeeping, business and organized education.

4. It should provide educational opportunities for those who have gone to work and also for those who are able to return and devote their time for some months or years, as the case may be, to a course or courses of instruction and training.

5. It should make provision to ensure, as far as practicable, equality of opportunity for all preparing for industrial, agricultural and housekeeping occupations and for workers in such occupations.

6. It should be carried on in cordial co-operation with existing systems of education, and in such a way as to have the advantage of the use of existing buildings, equipment and teaching staff so far as these may be suitable and available.

Efficiency by Free Co-operation.

Any effort at control, by means of a proportion of members of the administrative body, based upon the relative contributions of money from provincial and local sources, could not apply advantageously to work of this kind. The end to be sought is the most efficient and economical and suitable education which can be provided; and also the maintenance of local interest and the utilization of as much as possible of the local talent and the further equipment of that talent by the experience which the individuals would gain only by participating in the administration.

An instance: A statement made in this connection by Sir John Struthers, Secretary of the Scottish Education Department, is illustrative of much that came to the attention of the Commission in the countries visited. In substance he said that the Scottish Education Department would rather have a thousand men and women in Scotland thinking and planning and striving to make the courses of study and the education meet the needs of their own communities than have ten thousand implicitly doing what the department directed.

Experience elsewhere indicates that it will be advantageous to leave the initiative, the control and administration of the general work of the school largely in the hands of the local authority. The central or higher authority should co-operate by putting at the service of the local body the full information which it alone could possess, and the benefit of inspection, counsel and advice by experts whom it only could employ. Supervision and inspection should all be directed to conserving and increasing local interest, and at the same time to maintaining high standards of work in the school, and raising these gradually as the pupils and teachers from experience are able to come up to them.

To Fit in with General Education.

In order that there might be the least amount of waste in pupils passing from the elementary or general schools into the schools or classes for industrial training and technical education, and the greatest economy in the use of buildings, plant and competent teachers already in the service of the place, it would appear desirable that the local authority administering industrial and technical education should be identical with the local authority controlling general education or in close organic association with it. If separate from the other it would seem expedient that it should be appointed either wholly by the local authority or that at least a majority of its members should be so appointed, and that they should be, persons representing industries as employers and employees, business men, in the rural districts farmers, women who are housekeepers, and educators who have practical knowledge of school administration.

The Lay Elements to be Represented.

Experience in all countries indicates that it is highly desirable that the committee which has control of the courses should contain representatives of the employers and employees actively engaged in or connected with the several occupations for which the students are being prepared or in which they are engaged. The co-operation of these persons who are engaged in industry with the professional educators ensures that the courses of study provided, and the kind of work to be carried on in the school, will be such as to meet the needs of the industries, the personal requirements of the young people and also conform to the judgment of the workmen who have had experience as to what is most useful to them. Such co-operation also helps to make the work of the school not merely acceptable to the pupils and satisfactory to the parents but also to keep it in accord with the desires and judgment of the men already engaged in the several occupations.

The provision of opportunities for the development of individuals and for the training of workers for all the occupations can be accomplished only by gradual development. Only in that way can they become an economical part of the public service which contributes to the industrial, economic, intellectual and social progress of the nation.

Equality of Opportunity.

Sometimes an idea prevails that a scheme of education provides equality of opportunity by letting all who desire have access to the same classes. Equality of opportunity, to mean anything real, must have regard to the varying needs, tastes, abilities and after lives of the pupils. To be able to attend schools, whose courses are provided chiefly for those whose education can be continued until 18 or 20 years of age, does not ensure any sort of equality of preparation for occupation or for living to those who are compelled to leave at 14. Equality of opportunity to enter a school designed to prepare leaders, is not what is neeeded and is not what is wanted by the parents of most of the children. Equality of opportunity, to be sincere and operative, must offer opportunities of education which will serve the pupils not all the same thing, but will serve them all alike in preparing them for the occupations which they are to follow and the lives which they are to lead.

The problem is to unite in well-ordered courses of study what has been proven thoroughly useful in formal education with what has been found really educational in industrial and technical work. The Commission indicates how that may be done in the chapter on Some Provisions in a System of Industrial Training and Technical Education.

Must be Attractive and Adequate.

One of the first considerations is that the classes and courses must be attractive to the young people themselves.

Many different kinds of school work are needed to meet all the requirements of all the young workers. This statement requires to be repeated and again repeated.

The general principles now accepted as essential to the success of industrial and technical continuation schools are:—

1. That the subject matter of every course shall be directly related to the real problems of the daily life and occupation of the pupils.

2. That the pupils shall be arranged into classes so that those in one class will have common aims and purposes.

3. That the teachers shall have had practical experience in the occupations dealt with and be skilful in teaching, enthusiastic and sympathetic.

4. That the continuity of courses shall be maintained for one year at least and where practicable for several years in sequence.

5. That the schools shall be equipped with illustrative and teaching material adequate to meet the practical needs of the pupils and to appeal to their imagination and, so far as possible, to their artistic tastes.

6. That the rooms where the classes are held shall be attractive, comfortable and convenient, that the atmosphere of the place in an intellectual sense shall be encouraging and stimulating and that opportunities shall be provided for the right kind of social intercourse.

To Meet Individual, Industrial and National Needs.

The Commission recommends,—

1. That wherever practicable continuation classes should be constituted on the basis of identity or similarity of interests on the part of the pupils, rather than on the basis of ages, or academic or literary attainments. The best basis to indicate a similarity of interests is that of the occupation followed. In order that none might be excluded by their inability to join in such work as constitutes the course, it is desirable that there should be preparatory classes.

2. That the continuation classes should provide courses for the learners in the industrial, agricultural, commercial and housekeeping occupations of the community.

3. That the courses should be progressive from year to year, and that pupils should be encouraged to attend them for a period of not less than three years.

4. That continuation classes should be provided also for workmen and foremen, workwomen and forewomen, to enable them to extend their knowledge and increase their ability and skill for management and planning.

5. That schools or courses should be provided of the grade of intermediate and secondary industrial and technical education for those who are able to continue at school for from two to four years after the age for elementary education.

6. That middle technical schools or courses (industrial, agricultural and housekeeping) should be provided for those who are able to return to school for periods of from 3 months to 3 years after having been at work until at least 17 years of age.

7. That courses of a suitable sort should be provided for highly skilled foremen and managers. These might take the form of short courses, lasting from ten days up to one month, according to the needs of the particular industry or locality.

8. That existing institutions of college rank should receive whatever additional financial support may be necessary to enable them to fill their place in a national system of industrial training and technical education.

SOURCES OF FINANCIAL SUPPORT.

In the establishment and maintenance of industrial training and technical education in the several countries visited, the proportion of financial support provided by the several authorities was so various that no general statement of a principle can be deduced from the information obtained.

In the case of countries such as England and Scotland, in which substantially the same public authorities share in the control and expense of industrial training and technical education as carry on the work of general education, the proportion contributed by the central authority is sometimes more and sometimes less than in the case of its grants towards the support of general education.

In Germany the imperial and federal government does not contribute towards the maintenance of education or exercise any control in regard to it with the exception of indicating the standard, which qualifies those who pass the examination, to enjoy the right to give one year instead of two of military service, which qualification can be attained by boys at about their 16th year.

The proportion of the cost provided by the several authorities varies in the different states of the Empire, and also in the several cities, and sometimes in the one city in the case of each institution or kind of school. In the higher or more expensive forms of industrial or technical instruction the state, being the larger and financially the stronger authority, pays the largest proportion. The reason for that lies in the fact that those who receive the higher forms of technical instruction are best qualified to serve the state and advance its interests as a whole rather than those of any particular community.

In the United States public education is provided and maintained by the organized action of communities, county or district areas and the several states. The federal government exercises no control over and contributes nothing to the support of general education. In several Acts the federal government has provided substantial financial assistance for the establishment and maintenance of state colleges of agriculture and mechanic arts.

The United States and Switzerland are the two countries visited by the Commission in which the federal government does contribute substantially towards the establishment and maintenance of industrial training and technical education. In Switzerland the maintenance of general public education is wholly a question for the Communes and Cantons, although the federal authority has begun in recent years to give grants for the maintenance of general education in needy localities. The

federal parliament (the Bund) gives substantial grants for the maintenance of technical education and maintains the renowned Polytechnic at Zurich.

Considerations to be Kept in Mind.

The Commission is of opinion that the following considerations, and others of a minor character, indicate that individuals, corporations, associations, municipalities, the provinces and the Dominion should co-operate in providing financial support for a system of industrial training and technical education for Canada. The Commission has endeavoured to outline a plan whereby that may be done, with advantage to all interests concerned and injury to none, in the chapter on A Development Policy for Canada. The considerations referred to above are as follows:—

1. Since industrial training and technical education have everywhere proved advantageous to the community and the nation, it follows as expedient and proper that the state and the community should assist in providing the means of such education. Moreover since such education is of immediate benefit to the individual it may be claimed that the individual or his parents should meet part of the expense. However the interests of the community and the province predominate so much that in order to prevent any disability which the charging of relatively high fees might impose, public elementary and secondary education is substantially free to the individual. There are exceptions, but the trend is in the direction of the school, without fees, maintained by public funds. Although some of the universities and colleges charge high fees, in their case a considerable share of the total cost of education is provided either by grants from the provincial governments, revenues from endowments, or contributions from philanthropic sources.

2. The incidence of the charge for the cost of schools should have regard to the ability to pay as well as to the advantage that will result from the education. This principle should be applied in seeking a basis, which would be equitable, from which to obtain revenues to maintain industrial training and technical education. It may be assumed that the fees from pupils should not be considered as a main or important source of revenue, but should be rather for the sake of the effect on the attitude, earnestness and regularity of attendance of the pupils.

3. The cities derive the most immediate benefit from the maintenance of industrial training and technical education, and are financially better able to support it than the small communities in towns and villages and in rural districts. For both reasons a larger proportion of the total cost of industrial training and technical education might and should be borne by cities than by the smaller towns and rural communities.

4. The industrial efficiency of the individual worker is of value not merely to himself, to the particular trade at which he works, to the community in which he lives, but also to the nation as a whole. Moreover the facilities for travel and the frequent change of residence indicate that while the individual would obtain the benefit of industrial training and technical education in one locality he might follow his occupation in another that might be far distant. That would be the more common and likely because of the large and rapid growth and development of Canada.

5. The very considerable increase in the population of Canada by immigration is throwing additional burdens for elementary education upon the communities and the provinces. The enhanced public revenues due to growth by immigration goes in a large measure into the Dominion exchequer. The increase of the volume of trade brings in larger amounts through the customs offices. This would indicate that the new financial responsibility and burdens for industrial training and technical education, on a scale large enough and generous enough to be available to all the people between the ages of 14 and 18, should be sustained in large measure by funds from the Dominion Government.

6. The work carried on by the Dominion Experimental Farms, while mostly devoted to research work by experiment, is similar to some of the technical instruction provided in other countries as a part of the educational system. The many and valuable bulletins issued, the frequent and useful addresses by members of the staff at meetings of farmers and others and the visits of thousands of farmers to the experimental farms, are all definitely intended as a means to educate the farmers into a wider knowledge of the systems and methods of farming and the principles which underlie them.

7. The work of the Dairy and Cold Storage Commissioner, the Live Stock Commissioner and the Seed Commissioner are also in very deed educational, although not nominally so.

8. Those institutions and offices, and the activities of the officers themselves, are intended to have educational results, affecting the knowledge and ability of the farming community, affecting the methods whereby their work is being carried on, and in general developing the power of the workers through intelligence and increased skill in the management of their business. That they have so affected them is written large on the progress of agriculture and the education of farmers during the past quarter of a century.

9. A Dominion Act for the granting of aid for the advancement of Agricultural Instruction in the Provinces was assented to at the session of Parliament 1912-13. Section 3 of that Act (*The Agricultural Instruction Act*) is as follows:

> **3.** For the purpose of aiding and advancing the farming industry by instruction in agriculture, and for the purposes authorized by this Act, the following sums, aggregating ten million dollars, shall be appropriated and paid out of the Consolidated Revenue Fund of Canada during each fiscal year for the period of ten years beginning with the year ending the thirty-first day of March, one thousand nine hundred and fourteen, namely:—
>
> During the fiscal year ending the thirty-first day of March, one thousand nine hundred and fourteen, the sum of seven hundred thousand dollars;
>
> During the fiscal year ending the thirty-first day of March, one thousand nine hundred and fifteen, the sum of eight hundred thousand dollars;
>
> During the fiscal year ending the thirty-first day of March, one thousand nine hundred and sixteen, the sum of nine hundred thousand dollars;
>
> During the fiscal year ending the thirty-first day of March, one thousand nine hundred and seventeen, the sum of one million dollars;
>
> During the fiscal year ending the thirty-first day of March, one thousand nine hundred and eighteen, the sum of one million one hundred thousand dollars; and the like sum of one million one hundred thousand dollars during each of the

succeeding fiscal years until the expiration of the fiscal year ending the thirty-first day of March, one thousand nine hundred and twenty three; provided that any portion of any of the above sums which may remain unearned or unpaid at the expiration of any of the said fiscal years previous to the last shall be carried forward and remain available according to its apportionment for the purposes of this Act during any one or more of the succeeding years.

Restatement of Some Principles.

The Commission is of opinion,—

1. That financial support should be provided by public authorities and by individuals, corporations and associations who are directly concerned and who would be likely to profit by the results to be obtained.

2 That the relative measure of support should be in some equitable proportion to the interest in the results, and the ability to pay, of the four possible classes of contributors, viz,—(*a*) the individuals, corporations and associations, (*b*) the local community such as town, city or county, (*c*) the province and (*d*) the Dominion.

3. That in determining the proportion of cost of industrial training and technical education, to be contributed by different public authorities, regard should be had not only to the benefit to the local community to be expected from industrial training and technical education, but also to the ability of the community, and to some extent to its willingness, to provide the education of an adequate kind and to a sufficient extent.

4. That it is reasonable and desirable that the public authority with the larger financial resources should meet the largest proportion of the cost for the communities where population is most sparse and the amount of taxable property per head of pupils to be educated is lowest.

5. That the prevention of progress in a locality and the lack of development in individuals, which might result from delay in providing suitable education until the local community was both able and willing to provide it in full or in a large measure, would be felt not only by the community itself but by the province and Dominion as a whole. In consequence, on economic as well as other grounds, the larger public authority, provincial or Dominion, which is able to give a large measure of financial assistance to a community weak in resources would find such a course to be an excellent investment. The development of industrial training and technical education in such a community would bring it forward into ability to take a larger share for itself in maintaining the cost of such education and other public services.

6. That the authorities by whom financial support is furnished should have sufficient cognizance of the results from it to be able to pass intelligent and fair judgment on the question of continuing or lessening or increasing the amount of support to be given.

7. That the financial support should be arranged for under such legislation as would warrant individuals and communities in deciding to devote a considerable period of time and amount of money to the evolution of industrial training and technical education. In order that plans might be made with reasonable confidence in the permanence of the undertaking, it is highly important that such provision

should be made as would give reasonable assurance to the teachers and instructors, who become qualified to carry out the work, that satisfactory remuneration would be paid to them, and continued employment provided for them.

8. That the financial support provided from Provincial or Dominion sources as grants to local authorities, should be devoted mainly if not wholly to the payment of a proportion of teachers' salaries and of the cost of equipment for instruction.

ORDER OF PROCEDURE IN LOCALITIES.

The Commission is of opinion:—

1. That in smaller towns the provision at first should be in the nature of courses in industrial science, drawing and calculation, with opportunities for constructive work in wood, metals, textiles, foods or other materials appropriate to the larger industries of the neighbourhood. Out of such courses would grow classes or courses specifically appropriate for the workers in the various industries.

2. That in the larger places it would be expedient to provide courses appropriate for the groups of fundamental industrial occupations such as the building trades, metal and machine trades, woodworking trades, electric trades, textile trades, clothing trades, boot and shoe trades, printing and lithographing trades, leather, glove and harness trades, paper making, and art trades.

3. That when classes or courses for these grouped trades have been carried on, classes or courses for the particular trades could be evolved. For example for the building trades, there would be classes or courses for masons, bricklayers, carpenters, painters, etc. In like manner there would be developed for the metal and machine trades, particular classes or courses for machinists, moulders, blacksmiths, etc. In a similar manner out of the woodworking trades would come classes or courses for cabinet makers, furniture makers, pattern makers, wooden utensil and tool makers, etc. Out of the general school for the textile trades, special classes for spinners, weavers, lace makers and the makers of embroidery would be arranged.

4. That in every case a Local Development Board or other local authority should make or cause to be made, a plotted survey of the needs of the population by numbers, ages and occupations and another plotted survey of the provision (if any) which exists in buildings equipment and teaching force suitable and available for use. When the one plotted survey is placed over the other, the situation can be studied with the greatest advantage to all interests. In this connection consideration should be given to what was done at Leeds and Edinburgh.

5. That the training of teachers and executive workers for service in industrial and technical schools should be advanced as soon as practicable.

6. That classes for foremen and workmen who are both intelligent and highly skilled should be undertaken for the first object of giving such men greater qualifications for their own occupations. Such classes would primarily be for the benefit of those who attended them. Out of those who attended, doubtless a number would be revealed who would have some natural aptitude for teaching, and who during the following years would be disposed to teach in the continuation classes and to teach to some extent after the method by which they themselves had been instructed. To begin these classes it would be necessary to secure the services of a few highly efficient teachers who had had successful experience in such work.

7. That inducements should be offered to professional teachers, who already had a knowledge of and a taste for industrial and technical work, to spend some time in practical work in workshops or factories similar to those of the place in which they would afterwards teach.

8. That by a combination of these two methods, in a short time, it would be possible to secure a local supply of men competent to conduct continuation classes and the trade classes in day technical institutes. Men with more systematic and thorough training would be required for the higher places in technical institutes and middle technical schools.

There is no short cut by which a sufficient body of teachers for industrial education for all the industries, and for all the people in the various levels of service, can be obtained. Perhaps the best course of preparation is one whereby the teacher or the prospective teacher, during the whole period of education from the elementary classes onward, has been taught the subjects and the work which he will be required to teach and has been taught by such methods and in such a way as he would be expected to teach. Many persons will rely upon the recollection of how they were taught to a greater extent than they will depend on their own ability to translate into practice the principles of teaching according to which they were told to teach.

EXTRACTS FROM CHAPTER VII OF PART II.

A DOMINION DEVELOPMENT POLICY.

General Considerations.

1. It is important to adopt a plan which will secure the largest degree of *public confidence* and maintain the largest measure of *public interest and co-operation.*

2. It is important to adopt a plan which will preserve *Provincial control,* encourage *local initiative* and develop *local responsibility.*

3. It is important that there should be a *large number of persons* representing Manufacturing Industries, Trades, Commerce. Transportation, Agriculture, Forestry, Mining, Fisheries, Housekeeping and Education, *ready to take the initiative* in local undertakings and *able to co-operate* in making effective application to the needs of localities of financial grants and any other assistance. In the opinion of the Commission, a policy which would be applied wholly or mainly by directive authority from headquarters, leaving to local centres little initiative or responsibility, would not accomplish much for a long time.

4. It is important that there should be in each Province *a Central Body or Authority,* which could bring to bear on all proposals from local centres the wide knowledge and practical experience of *capable men and women* familiar with education and with industrial, agricultural and housekeeping problems. Such a Central Body would be able to supply information for the guidance of Local Authorities at the beginning of their work, and to furnish advisory assistance through experts of high ability. Through the meetings and discussions of such a Central Body the permanent officials charged with the administration would be kept in touch with public opinion as to the particular needs of localities, as to the *suitability and acceptability* of schemes proposed, and as to the practicability of having such schemes supported and carried out. The Central Body would also serve the purpose of *a clearing house* through which an intimate knowledge of the results from experience in one locality would be made available to other communities.

5. It is important to adopt a plan whereby the Dominion, the Provinces, the Localities and Individuals will *co-operate and each contribute* in some well-considered and equitable proportion *to the cost* of development undertakings. A plan of organization which provides for the financial support from Communities being properly articulated with financial grants from Central Authorities would tend to bring about *efficiency and stability.* A long time is required to realize upon educational work; and continuity of effort to meet recognized needs is essential. The plan should be such as would ensure concurrent progressive action in the same direction by the Central and Local Bodies. Provision should be made for *Efficiency Audits,* in order that each Contributing Authority may be assured that the money is being used for the purpose for which it is granted, and that the work is being well done.

6. It is important to adopt a plan which will ensure that the *national interests* as well as the local points of view will be considered.

7. It is important that there should be a *Dominion Consultative Body*, through which the widest knowledge and experience could be put at the service of all the Provinces and thus be brought to bear on problems and undertakings of consequence to them all.

8. It is important that there should be *a Dominion Authority* competent to co-operate with Provincial Authorities, to provide *expert counsel* to any Province which might not be adequately organized or staffed to render service in that respect to all localities and industries within its borders, and to promote *scientific industrial research* and the diffusion of knowledge resulting therefrom.

The Commission's Recommendations.

The Commission recommends that Local and Provincial Development Bodies be constituted as follows:—

I.—Local Urban Industrial Development Boards.

II.—Local Rural Development Boards.

III.—Provincial Development Councils.

IV.—Provincial Development Commissions.

The Commission further recommends the constitution of,—

V.—A Dominion Development Conference.

VI.—A Dominion Development Commission.

VII.—A Dominion Development Fund.

I.—Local Urban Industrial Development Boards.

Duties—

1. To consider by what means Industrial Training and Technical Education may be applied most advantageously to the development and improvement of workers, industries and occupations within the areas served by them severally.

2. To make proposals, applications or recommendations to a Provincial Development Council, or any other authority constituted by the Provincial Government as competent to deal with such proposals.

3. To provide and maintain Industrial Training and Technical Education by means of institutions, classes, courses or otherwise, subject to the regulations of the Government of the Province.

4. To provide Vocational Guidance for the youth of the area by such means as they may think fit.

5. To administer any Grants received for any of the aforesaid objects.

Constitution—

As provided for by each Province by Order in Council or by legislation.

Suggestions—

Each Board to be appointed preferably by the local education or municipal Authority; or if not wholly so appointed, then to the extent of two-thirds by the local Authority or Authorities, with one-third appointed by the Provincial Authority for Industrial Training and Technical Education.

Each Board to include one or more members of the Local Education Authority and to represent:—

(1) Employers and employees in manufacturing industries, trades, commerce, mining, fisheries and transportation;

(2) Housekeeping;

(3) Education.

Having regard to the desirability of continuity of policy, appointments to be made preferably for a term of years, a proportion of the members retiring every year, and being eligible for re-appointment.

It would likely be found expedient for each Board to constitute Committees for the more effective carrying on of its work. The main divisions would obviously be industrial, housekeeping, and vocational guidance, with such further divisions or subdivisions as might be thought desirable.

II.—Local Rural Development Boards.

Duties—

1. To consider by what means Industrial Training and Technical Education may be applied most advantageously to the development and improvement of workers, of agriculture, rural industries, housekeeping and occupations in rural communities, within the county or other area served by them severally.

2. To make proposals, applications, or recommendations to the Provincial Development Council or any other authority constituted by the Provincial Government as competent to deal with such proposals.

3. To provide and maintain Industrial Training and Technical ducation by means of institutions, classes, courses or otherwise, subject to the regulations of the Government of the Province.

4. To administer any grants received for any of the aforesaid objects.

Constitution—

As provided for by the Province by Order in Council or by legislation.

Suggestions—

It would appear to be desirable, where local conditions permit, that a county area should be the area served by the Local Rural Development Board. In some case, it might be found expedient to combine one county with another, or with part of one or more other counties.

Each Board to be appointed, preferably two-thirds by the education authorities or the municipal councils of the area served, with one-third appointed by the Provincial Authority for Industrial Training and Technical Education.

Each Board to represent:—

(1) Agriculture;

(2) Industries;

(3) Housekeeping;

(4) Education.

Having regard to the desirability of continuity of policy, appointments to be made for a term of years, a proportion of the members retiring every year and being eligible for re-appointment.

It would likely be found expedient for each Board to constitute Committees for the more effective carrying on of its work. The main divisions would obviously be:

agricultural, rural industries, and housekeeping with such further divisions or subdivisions as might be thought desirable.

III.—Provincial Development Councils.

Duties—

1. To consider systems and schemes of Industrial Training and Technical Education for the development and improvement of workers, industries, agriculture, housekeeping and occupations within the province.

2. To make recommendations to the Provincial Development Commission or to the government of the province in that connection.

3. To do such other things as may be required by the government of the province in relation to Industrial Training and Technical Education.

4. To make recommendations to the Dominion Development Commission.

Constitution—

As provided for by the Province by Order in Council or by legislation.

Suggestions—

Two-thirds of the members might be elected by local development boards, and one-third appointed by the Provincial Government to represent:—

(1) Manufacturing industries, trades, commerce, mining, fisheries and transportation (employers and employees);
(2) Agriculture and forestry;
(3) Housekeeping;
(4) Education.

Or

Members might be all appointed by the Provincial Government to represent interests as aforesaid.

Appointments or elections to be preferably for a term of not less than six years, a proportion of the members retiring every two years, and being eligible for re-appointment or re-election.

A Provincial Development Council would doubtless find it expedient to forward its work by means of committees such as industrial committee, agricultural committee, and housekeeping committee, with such further divisions or subdivisions as might be found desirable.

IV.—Provincial Development Commissions.

Duties—

1. To consider what may be necessary for or advantageous to the development and improvement of workers, industries, agriculture, housekeeping and other occupations within the province by means of Industrial Training and Technical Education.

2. To co-operate with the Provincial Department of Education and with other authorities within the province for the organization, administration, and maintenance of Industrial Training and Technical Education within the Province.

3. To provide the service of experts for advising with local authorities and for other purposes as might be expedient.

4. To inspect and report upon the work of all classes, schools and institutions in respect to which any grant is made from public funds for Industrial Training and Technical Education; and to make recommendations to the Provincial Government in respect to the administration of any grants or other assistance in aid of Industrial Training and Technical Education.

Constitution—

Members to be appointed by the Lieutenant Governor in Council.

V.—A Dominion Development Conference.

Duties—

1. To consider questions of Industrial Training and Technical Education for the development of the Dominion in respect to workers, industries, agriculture, housekeeping, and occupations, referred to it by Provincial Development Councils, or any other authorities constituted by Provincial Governments in this relation, and to advise each provincial authority in regard to such questions.

2. To consider and report upon questions referred to it by the Dominion Development Commission.

Constitution—

Representative members:—

(*a*) Elected representatives of Provincial Development Councils.

Suggested basis of representation: 3 members from each Provincial Council, plus one member for each 300,000 population or fraction thereof above 300,000 in the province as determined by the latest decennial census.

Official members:—

(*b*) One member of each Provincial Government or a deputy accredited by him.

(*c*) One member of each Provincial Development Commission.

(*d*) Members of the Dominion Development Commission.

VI.—A Dominion Development Commission.

Duties—

1. To co-operate with provincial and local authorities, such as provincial development commissions and councils, local development boards and any other authority constituted by a provincial government for the development and improvement of industries, agriculture, housekeeping and occupations by means of Industrial Training and Technical Education.

2. To provide experts, whose services for counsel would be available to provincial and local authorities.

3. To promote scientific industrial research and the diffusion of knowledge resulting therefrom.

4. To provide and maintain and to assist in providing and maintaining central institutions to supplement the work carried on by the provincial and local development authorities, if and when such central institutions are approved by the Dominion Development Conference.

5. To make recommendations for the administration of the Dominion Development Fund.

6. To report to the Governor General in Council, or to a Department of the Dominion Government.

Constitution—

Members to be appointed by the Governor General in Council.

PROVISIONS IN A SYSTEM FOR INDUSTRIAL TRAINING AND TECHNICAL EDUCATION.

The Commission considers that the provisions which are indicated hereafter under the names of classes, courses, schools, institutes and colleges, are necessary in a system or systems of industrial training and technical education for Canada.

The plan of statement by classes (or schools) is adopted because it is believed that by this means local authorities and provincial authorities will be helped in the best way to co-ordinate the provisions which now exist with what is to be provided, in so far as that is desirable, and vice versa.

The provisions have been arranged under three main headings:—

For those who are to continue at school in urban communities;
For those who have gone to work in urban communities;
For rural communities.

The provisions recommended are as follows:—

For Those who are to Continue at School in Urban Communities.

Division I. Intermediate industrial classes (or schools).
" II. Co-ordinated technical classes (or schools).
" III. Technical high schools.
" IV. Apprentices' schools.
" V. Industrial and technical institutes.
" VI. Technical, home economics and fine arts colleges.

For Those who have Gone to Work in Urban Communities.

Division I. Continuation classes (or schools).
" II. Co-ordinated technical classes (or schools).
" III. Middle technical classes (or schools).
" IV. Apprentices' classes (or schools) in workshops.
" V. Industrial and technical institutes.
" VI. Extension Lectures and Correspondence-study courses.

For Rural Communities.

Division I. Intermediate rural classes (or schools).
" II. Rural high schools.
" III. Continuation agricultural classes (or schools) under resident or travelling district instructors.
" IV. Continuation housekeeping classes (or schools) under resident or travelling district instructresses.
" V. County or district agricultural and housekeeping schools.
" VI. Young people's social service schools.
" VII. Schools for agricultural apprentices.
" VIII. Agricultural and home economics colleges.
" IX. Correspondence-study courses.

MAKING THE MOST OF EXISTING PROVISIONS.

Some of the provisions recommended herein already exist in more or less developed and organized form in some places. In the matter of the highest institutions, such as Technical Colleges, Colleges of Agriculture and Schools of Domestic or Household Science, Canada appears to be well equipped in numbers. They could all be used to their utmost capacity and to great advantage in connection with the education of teachers and other leaders in all departments of Industrial Training and Technical Education.

It is not to be inferred that the classes (or schools) of any division require buildings, equipment or staff for themselves, wholly separate from what is required for the classes (or schools) in other divisions. Whether an institution should have accommodation and facilities for more than one kind of classes (or schools) is a matter to be decided according to local conditions. There are undoubted advantages from having classes of the different divisions (and of different kinds in the same division) in one institution, and there are advantages from having the more elementary classes in a building or buildings convenient to the homes of the pupils. Local needs, conditions and resources furnish the only adequate data for guidance in that respect.

The Commission counsels energetic action in all the provinces in arranging for the classes, and advises prudent consideration before deciding upon new and permanent buildings. A year or two of experience in provisional quarters would enable the local authority to avoid serious mistakes. Expert counsel and criticism which should be available from headquarters, would assist it to provide for its needs economically, adequately and effectively. For example, in the city of Belfast six years of creditable work were accomplished before the Municipal Technical Institute was completed. By that time its arrangements and equipment provided just the right kind of facilities. They have become a tribute to the wisdom and ability of those in charge and a model for other towns and cities.

A DOMINION DEVELOPMENT FUND.

The Commission recommends that the sum of $3,000,000 be provided annually for a period of ten years by the Parliament of Canada and paid annually into a Dominion Development Fund.

NOTES:—

1. Not less than 75 per cent of the amount paid each year into the Dominion Development Fund, from the above source, to be divided into nine portions, in proportion to the population in each of the nine provinces as determined by the latest census, and alloted to each province accordingly for development undertakings therein. Each of the said nine portions of the fund to be administered as the, '(name of the province) Account of the Dominion Development Fund'; and the remainder of the fund to be administered as the 'General Account of the Dominion Development Fund.'

2. Any portion of the Fund allotted to a province which may remain unearned or unpaid at the expiration of any fiscal year, to be carried forward and remain in the Account of the province until required for development work within such province.

3. Any portion of the Fund in the 'General Account' which may remain unexpended at the expiration of any fiscal year to be carried forward and remain in the 'General Account' until required for development work upon the recommendation of the Dominion Development Commission.

4. Payments to be made to development authorities in any province from the funds in the account of such province and from the funds in the 'General Account' only upon the recommendation of the Dominion Development Commission.

5. In order that a provincial government or local development authority may be entitled to receive a payment from the funds in a provincial account of the Dominion Development Fund, it will be necessary:—

(*a*) That the *Service* (that is the development undertaking proposed by a development authority) and the *Budget*, for the fiscal year for which the payment is intended, shall have been approved by a Provincial Development Commission or other authority constituted by the provincial government for that purpose; and that a copy of said *Budget* and a copy of a certificate of approval by the provincial authority of the proposed *Service* shall have been received by the Dominion Development Commission.

(*b*) That such a certificate shall have been issued by a Provincial Development Commission or other authority recognized by the provincial government as competent to make an efficiency audit, to the effect that the said development authority is administering the *Service* adequately and efficiently and in accordance with the authoritative regulations; and that a copy of said Certificate of the Efficiency Audit shall have been received by the Dominion Development Commission.

6. In any case where a development authority has not maintained and carried out the *Service* (that is the development undertaking provided for in the *Budget*), adequately and with reasonable efficiency, the Certificate of the Efficiency Audit shall state the extent to which the undertaking was not maintained and carried out in an efficient and satisfactory manner; and the certificate shall also state whether the development authority is taking any steps to remedy any such deficiencies as exist.

7. If the Dominion Development Commission is not satisfied that the development authority is maintaining and carrying out the service adequately and with reasonable efficiency, it may at its discretion deduct such amount as it thinks fit from the amount of the grant from the Dominion Development Fund that would otherwise be payable, and give a certificate declaring its dissatisfaction and the amount of such deduction, and in that case only the amount of the grant so reduced shall be payable to the development authority in question.

8. Before a payment can be made for a development *Service* in the second or any subsequent year of its progress, a duly audited statement in detail of the receipts from all sources for the maintenance of the said *Service* and of the actual expenditure upon said *Service*, for the preceding fiscal year, shall have been received by the Dominion Development Commission.

9. The treasury may accept gifts into the Dominion Development Fund for all or any of the purposes for which payments may be made from the accounts of the provinces or the general account.

Summary of the Uses of the Fund.

Payments should be directed to secure as speedily as is practicable:—

1. The service in each province of an adequate supply of persons (teachers, instructors, demonstrators, executive officers) properly qualified to carry on Industrial Training and Technical Education.

Suggestion.—Seventy-five per cent of the cost of training, or of securing otherwise, might be paid.

2. The establishment or extension and maintenance of classes, courses, schools or other institutions or means for Industrial Training and Technical Education.

Suggestion.—A proportion of the salaries of teachers, instructors, demonstrators and executive workers, according to approved *Budgets,* might be paid, varying from one-half in cities, to two-thirds in towns, and three-quarters in villages and rural districts.

3. The provision of suitable and adequate appliances, apparatus and equipment for teaching purposes, but not including school buildings furniture or consumable supplies.

Suggestion.—Seventy-five per cent of approved *Budgets* might be paid.

4. The provision of scholarships to equalize opportunities to young people and other workers to profit by classes, courses, schools or other institutions.

5. The provision of experts with experience in Industrial Training and Technical Education whose services for counsel would be available to provincial and local authorities.

6. The service of central institutions when and where required to supplement the work carried on by the several provincial and local development authorities either by providing and maintaining or by assisting in providing and maintaining such central institutions.

7. The promotion of scientific industrial and housekeeping research and the diffusion of knowledge therefrom.

EXTRACTS FROM CHAPTER IX OF PART II.

EDUCATION FOR RURAL COMMUNITIES.

Introductory.

Canada is not wholly free from anxiety regarding the movement of population from the open country into towns and cities.

The total population increased from 5,371,315 in 1901 to 7,204,838 in 1911, or 34 per cent. From 1901 to 1911 the urban population increased from 2,021,799 to 3,280,444 or 62 per cent; the rural population in the same period increased from 3,259,516 to 3,924,394 or 20 per cent. That is to say, notwithstanding the opening

up and occupation of vast areas of virgin land in the western provinces, the total rural population of Canada increased during ten years by 664,878 while during the same period the urban population increased by 1,258,645.

A similar movement of population from the country to the towns is going on in the other countries visited, with the exception of Denmark.

Among the undisputed factors which cause a flow of population from agriculture to other occupations are: (1) the use of improved machinery, whereby the number of units of human labour required on land to produce a given quantity of food is less than formerly; (2) the desire of some farmers to leave the rural parts for towns and cities to obtain what they think to be a better chance for the education of the children; (3) the fact that money circulates more freely in towns than in the country; (4) the attractiveness to young people of the amusements and excitements afforded by town and city life.

Qualities of Country Life and Agriculture.

Difference of opinion may exist as to remedies, but there is substantial agreement as to the desirability of having a large percentage of the population living in the country, engaged in agriculture and other rural occupations. Four chief considerations are urged in that behalf:

(1) Country life contributes to the virility of the race in body, mind and morals.

(2) Agriculture is a means of creating wealth annually out of the resources of nature without consequent exhaustion of the fertility of the soil. Countries where agriculture is centuries old, such as England, Scotland, France and Germany, report yields of crops higher on the average per acre than at any previous time in their history.

(3) Successful farming maintains a basis for prosperity in manufacturing, transportation and other businesses; and affords stable support to all prudent national undertakings.

(4) The increased cost of living in towns and cities is a pressing problem. A larger production of food in Canada might not at once reduce materially the retail prices; but the further organization of producers and consumers, for doing business closer together, would reduce the amounts which are absorbed during the progress of the food products from the farm to the consumer's table.

The chief forms of satisfaction which any worker seeks to obtain by labour are possession of material things, opportunity for social enjoyments, and pleasure from doing the work itself in addition to the wages or money returns from the product. Whatever enables the rural population to obtain worthy satisfaction in these respects is to be sought for their benefit, and likewise for the advantage of the country as a whole.

Nothing can be done by legislation to compel people to stay in the country, but much may be done by education to cause them to prefer to stay there. The saying: 'Where there is no vision the people perish' was never truer than at present in its application to the movement from the country and the attenuation of rural life in Canada.

Education by Self-Help.

Whether the movement of population, at present flowing from rural to urban areas, goes on ceases or takes an opposite direction, the rural communities for their own sakes are entitled to and must have education suited to the needs of all their members. Education cannot be conferred upon them; it may not be beneficially imposed upon them; it must be evolved by themselves by selp-help, and if need be by some measure of self-sacrifice, with the co-operating assistance of governments.

The conservation of a vigorous, intelligent and prosperous population in the country stands out among the foremost duties of the whole nation; and any neces sary burden of expense for that purpose might well be undertaken as a wise national investment. The practical ends to be aimed at, as likely to be effective for the accomplishment of the national objects, are summed up in the words attributed to Sir Horace Plunkett: "Better farming, better business, better living." Acceptable instruction, adequate education, capable leadership and hearty co-operation are necessary means.

In all progressive countries education is being adjusted to meet the needs of the children of the rural population, to interest them in rural life and to qualify them to follow it with advantage; and keen attention is being directed to means for the instruction and guidance of the adult population. France, Germany and Denmark are noteworthy examples of what has been done in that respect. More recently Ireland and England are bending their energies, in some measure successfully, towards the same end. The question is significantly prominent in the United States.

Teacher Should be Permanent.

The Commission is aware that to carry on the Rural School in the manner suggested would require a teacher of ability, a teacher who might reasonably be expected to continue in the service of the one school for a considerable number of years. Whatever would help to bring about that condition would be entirely advantageous and wholly desirable.

Particularly in technical schools of the highest order, such as the Industrial Art Schools, and also in other technical schools abroad, not only are instructors given permission to follow the occupation or art in connection with which they teach, and to earn remuneration for themselves thereby, but they are encouraged to do so, in order that they may be kept in direct and active touch with the practical and business side of the industry or art. If a good farmer properly trained and qualified could at the same time be a teacher of the rural school, particularly the rural high school, his efficiency as a teacher and his force and influence as a leader in the locality would be increased rather than diminished. Whatever would help towards the permanency of his tenure and service as a teacher in a locality would be advantageous.

Salaries and Residences.

If the salaries which the people of the locality are willing to pay are not adequate to secure that end it is wise to consider what other inducements, attractions, remunerations or satisfactions might be provided for the teacher. A school residence and

grounds, part of which might be used for garden purposes as in France, would help to retain the teacher and dispose capable young men to select teaching in the country as a permanent occupation. Particularly in the case of rural high schools, residences are an essential part of the educational equipment for rural communities, and under present conditions in Canada their erection and maintenance would be development work of great value and benefit to the state—doubtless more than development work which concerns itself only or chiefly with material resources and results from them.

The permanency of the service of teachers in Germany impressed the Commission as one of the strongest factors in what has brought about the efficiency of their schools. Whatever cost would be necessary to ensure the training of the young people into ability for rural life and towards a liking for it might be counted as a profitable investment on the part of the community and the state. Fortunate are the people who learn to use, and choose to use, their material wealth for the enrichment of life itself and the improvement of opportunities for boys and girls in the country.

The Other Interests to be Considered.

It is not enough that the adult population should be given assistance in matters directly concerned with their schools and occupations only. The experience of other countries reveals the distinction between the development of agriculture and the uplift of rural life. Every department of rural life must be taken into account.

The problems of the farm itself in regard to crops, fertility, weeds, labour and profits are foremost. Close beside them are the problems of the farm home. More than any other calling, farming is a mode of life as well as an occupation. Here the home plays an important part in the occupation as well as in the domestic and social life of the community.

The rural school is capable of immensely greater service in ministering to the intellectual, social and spiritual needs of the population; and the instruction and training of the adolescent youth towards efficiency for rural life under educated, acceptable and capable leadership is an obligation of urgency and highest importance.

Greater facilities for, and a better public spirit towards, wholesome recreations are necessary. It is eminently important that the farming operations should be profitable; but that is not enough. It is necessary that rural life should be interesting and satisfying to young people. The exciting and even sensational entertainments and amusements of the town are a strong magnet on many natures. Competition in kind by the country in this field of distraction is neither possible nor desirable. Finer music is ever the attraction which prevails over the call of the sirens. And the taste for the pleasures of playing, working and living in the country, the capacity for helping to provide them, and the preference for staying there to enjoy them, are to be conserved and developed in youth.

Co-operation is Wholly Beneficial.

Organized co-operation in business has been found beneficial financially, intellectually and socially. Men and women, who associate themselves for business purposes to accomplish ends for their common good, gain respect for and confidence

in each other as they come together. The natural leaders find their place of willing service for the community. The benefits to the locality are not opposed to personal advantage. Individual effort finds its best opportunity in the prosperous neighbourhood; and prosperity which is shared adds to the richness of living as well as to the wealth which is possessed.

It is high time for Canada to recognize the difference between the primitive conditions of the undeveloped country and the complexities of advanced rural life in a democratic civilization. The way to satisfaction and success in rural life is by pooling the intelligence, the business ability and the social spirit of the neighbourhood, and then, with local, provincial and Dominion assistance, to organize that illimitable fund of self-help for application to the community.

The problems and needs of one neighbourhood are in their essence substantially the same as those of a township, a county, a province and the nation. The national problem is so large that it seems beyond the capacity of any individual or organization. On the other hand the betterment of the situation in one neighbourhood is within the power of those who live there. That may be advanced by community effort, competent leadership, financial assistance, and the enthusiasm which finds from something accomplished something done, new confidence and strength for wider tasks unto the perfect day.

WHAT THE COMMISSION RECOMMENDS FOR CANADA.

Rural Elementary Schools.

The question of prime importance is to get the teachers and courses of the rural elementary schools faced aright. A good deal is being done in several provinces, notably those which have agricultural colleges and provide special courses for rural teachers, but years of time will be required.

Intermediate Rural and Rural High Schools.

Early efforts should be made to establish or extend intermediate rural classes (or schools) and suitable rural high schools for pupils of both sexes from thirteen years of age upwards.

Intermediate Rural Classes or Schools.

In general the training at these schools would prepare pupils for engaging in farming and housekeeping occupations and for admission to the third year of rural high schools.

The qualifications for admission should be thirteen years of age and over and the completion of the work of the elementary school or ability to write, read, draw, and calculate to the satisfaction of the principal or committee on admission. Some of the classes would be separate for boys and girls. The courses would continue two years of five to seven months each at the school, and the rest of the year at the farm or home according to local conditions.

The kind of work to be done at the school would provide for series of experiences in proper sequence and have regard to the conditions of farming and housekeeping in the locality.

Chief Objects of the Course.

The object of the school would be the preparation for general farming and successful life in a rural community. The courses of work should be provided with that in view, and the methods of instruction to be followed should be subordinate to that chief aim. Too often the method of instruction in rural and other schools has been the one which seemed the best adapted to preparing pupils to pass examinations for which the chief qualification has been the possession and exercise of an excellent verbal memory. There should be the maximum of practical work arranged in proper sequence for the development of the pupil and, consistent with that, the use of books. So far as the benefit to the pupil is concerned, this minimum of time on books would likely result in the use of books in such a way as to render the student the maximum of service.

Throughout the whole course, and in all the work and study, due regard should be had to the development of a spirit and habit of good citizenship. That may best accomplished by the student participating in forms of activity which are part of the social life of the community and of the social and intellectual life of the school as an institution.

Rural High Schools.

The rural high school, with its four year course, would give a wide basis of general training and knowledge upon which to base further study and work. It is an institution which should give an excellent and suitable education for rural life and should prepare students for admission to an agricultural college.

The course would be four years. During the first two years the work to be done would be similar to that in the intermediate rural school with the difference that the high school might continue longer each year.

Science subjects should be taught particularly in the relation of their application to rural work, rural problems and the principles underlying the systems, methods and operations of farming and housekeeping.

On the literary social and cultural side, special attention should be given to language, literature, history, physical culture, singing and such experiences as make for the enrichment and efficiency of intellectual and social life in rural districts.

In general the training at this school would prepare pupils for engaging in rural occupations and housekeeping and for admission to agricultural housekeeping and arts colleges.

Some of the Advantages.

Where no provision has existed for the carrying on of systematic productive work, in connection with the organized studies at the school, the pupil has been unable to bring the different elements together for his growth in either intelligence or ability. When the subject-study has been carried on by itself, unrelated at the time to practical or manipulative work in connection with it, only a few pupils are usually able to profit by the information thus acquired When both are carried on

together and the pupil writes up a record of what he has observed, what he has planned or reasoned and what he has done, the record itself is both a means toward and an evidence of clear and consecutive thinking on the part of the pupil. The habit of putting ideas into written form is in itself good mental training and also puts the ideas thus expressed better within the command of the pupil.

The progress to be expected in the boy himself would be, in the main, along five lines:

(1). The development of the habit of observing and learning by trying to accomplish a definite useful piece of work in which his interest was keen and continuous.

(2). The development of practical ability from trial and experience in carrying out processes necessary to give effect to his plans; the development of skill in work and of power in managing himself with the least waste of time and strength, and in managing tools, machinery and materials to the greatest advantage.

(3). The formation of the habit of seeking information which could be depended upon to enable him to understand the principles underlying what he was planning to do and trying to do. That would be fostered by discussion with his father, the teacher and others as to how best to accomplish the desired ends, by conferences and discussions with other boys who were carrying on farming-projects, and by the study-project of reading and study arranged in proper sequence to give him a wider range of knowledge of use to him in the definite farming-project which he had in hand.

(4). The establishment of habits of forming reasoned judgments and opinions upon situations, conditions, theories, principles and methods of farm work and management.

(5). The development of will-energy to give effect to his decisions and of desire and ability to co-operate with others in useful undertakings.

Resident or Travelling Instructors and Instructresses.

Resident or travelling county or district instructors for farming and housekeeping should be provided as soon as as is practicable. These instructors would carry on work similar to much of what is undertaken at present by district agricultural representatives in Ontario and Quebec. The character and extent of the work would be adapted to the conditions of the district and should follow along the lines indicated hereafter. As soon as provision is made for intermediate rural schools or rural high schools the instructors should be associated with them; they would be particularly useful in helping to co-ordinate work on the farms with the work at the schools—the agricultural projects with the educational projects.

It would be an advantage, and it has almost become a necessity, for the county or district instructor to have both suitable headquarters and an assisting staff adequate in numbers and efficient in qualifications.

As soon as the county or district instructors could be associated with Illustration Farms such as those arranged for by the Committee on Lands of the Commission of Conservation, it would be feasible to develop the various divisions of the work to much greater advantage. The Neighbourhood Improvement Associations, which co-operate with the expert in the development of the Illustration Farms, would be good local bodies with which to work.

Different kinds of work are undertaken by the district representatives in different areas to meet local conditions and local needs. The duties of the district representative are as various as the conditions of rural life in the place. At one time the representative is required to give one or more lectures, then to carry on practical demonstrations, and again to offer practical advice on some particular farming problem. It does not seem feasible for one individual to carry on these multitudinous duties satisfactorily and effectively, particularly as in each division more and more will be expected and more and more is required.

Outline of Work for a County.

The matters of first importance to be provided for in Canada at the present time are:—

(1) Visits of inspection and instruction and advice to the individual farmers on their own places.

(2) Holding field meetings with farmers in connection with field crops, fruit culture, live stock, etc.

(3) Interesting the rural teachers in rural elementary education so conducted as to serve agricultural and rural life.

(4) Arranging for and taking part in courses of instruction in elementary agriculture and school gardening for rural teachers at convenient centres.

(5) Arranging annual gatherings and exhibitions to illustrate the year's work and progress in agricultural education.

(6) Arranging for short courses of from two to four days' duration at convenient centres throughout the county or district.

(7) Arranging for longer courses of systematic instruction during four months of winter. These may take the form of the Irish short courses, being held two half days a week at each place, classes at three centres being carried on each week.

(8) Arranging and giving lectures to farmers' clubs, farmers' institutes and other local organizations.

(9) Advising by correspondence and reporting on specimens of insect pests, weeds, soils, etc., sent in for examination.

(10) Distributing bulletins and other printed matter from the Departments of Agriculture and Education.

(11) In general these instructors would carry on work similar to some of that undertaken by district representatives in Ontario and Quebec. It would be extended according to the conditions of the districts.

Schools for Agricultural Apprentices.

Such schools on the continent of Europe, in Ireland, and to a limited extent in England, pay particular attention to the training of pupils in manual dexterity and familiarity with the ordinary operations of farm work, such as ploughing, seeding, stacking, threshing, etc.

Only in the portions of Canada where settlement is comparatively new are farm schools for the purpose of teaching the ordinary farming operations necessary. In

the older districts, before a pupil is admitted to the county or district agricultural school, he should have spent long enough at practical farm work to have learned all the operations thoroughly. At the same time it is to be remembered that the actual practice of farm work in many parts of Canada is greatly below the standard of ordinary practice in England, Scotland, Germany, France and Denmark. The remedy for this state of affairs can only be gradual and comparatively slow. It may perhaps best be brought about through the co-ordinated farming-projects in connection with the intermediate rural schools and the rural high schools. The influence and instructon of the travelling instructors would doubtless also have a marked effect on the skill and effectiveness with which the farm work is done.

Farm Schools.

The proper place at which to learn farming is a farm, managed as a business concern to provide a living and competence for the owner or worker. Farm schools, where young men would learn how to do the work of farming and the methods of management, would be advantageous for people who have come to Canada from other countries without any experience of farm work under conditions similar to those of Canada or with implements and tools like those used in Canada. Particularly in the districts which are being settled by those who come from countries whose climatic or soil conditions and farming methods are different from those of Canada, it would be advantageous if a farm such as an 'Illustration Farm' could be designated to receive such people for short courses, lasting from a week at a time up to a longer period, according to their needs.

The Commission recommends for such districts an Illustration Farm on a plan somewhat similar to those arranged for by the Committee on Lands of the Commission of Conservation. It might be the headquarters of a travelling instructor. To supplement the information and advice which such an instructor could give on their own farms, he could meet the newcomers in groups from time to time at the Illustration Farm to give illustration and demonstration of the operations and methods of farming suitable to the district and to the resources of those who are settling in it. The waste of time which often occurs, the loss of crop which sometimes ensues, and the disappointment for a period of one or more years which frequently comes to the beginner, might be in a large measure prevented. Whatever would accomplish that would be of economic advantage to the whole community, not merely from the immediate saving and prevention of loss, but from the ability, knowledge and spirit resultant in these new settlers. The benefit would be to the individuals themselves, to their community, and to the business and transportation interests.

County Agricultural and Housekeeping Schools.

Concurrently, a beginning should be made in the establishment of county or district agricultural and housekeeping schools for young men and women from 17 years of age onwards. These would be somewhat similar in purpose and organization to the Danish agricultural schools, and the county, district or state agricultural schools of the United States. Of these latter there are now more than 100, located in 17 different states, which support them in whole or in part. They are distinct

from the agricultural colleges. Two features distinguish these county or district agricultural and housekeeping schools. The courses are short, each is complete in itself and directly and specifically vocational for those who have already had a few years of experience in practical work; and the schools are residential.

Agricultural Colleges.

The agricultural colleges in Europe do not differ from Canadian agricultural colleges in such a way as to make it necessary or useful to give outlines of their courses in detail. One outstanding difference inheres in the fact that the Canadian agricultural colleges have professedly aimed to educate young men to go back to the farms to carry on farming there Then claim credit for the extent to which they have accomplished that. On the other hand, the agricultural colleges of Europe definitely profess to train young men for professional service in connection with agricultural and rural life.

It appears to the Commission that the time has arrived when a similar aim and course should be followed at the agricultural colleges in Canada. The need for capable and thoroughly trained men is already so great that the present capacity of the agricultural colleges would not suffice to meet it for several years to come.

To Train Public Servants.

To meet that need, it appears to the Commission that the agricultural colleges maintained by public funds should devote themselves chiefly to the education of those who would serve the rural community. Under present conditions it does not seem probable that any large percentage of the working farmers can be spared from their occupations or can have opportunity to take a full course at an agricultural college. The helpfulness of the agricultural college can be carried to every community through the labours, knowledge and character of men and women who are trained at the college for professional service; and it can best serve the rural population through the education of such men and women.

The training and the education of the practical working farmer should be provided for in the elementary school, the intermediate rural classes, the rural high school, the county agricultural school, and by short courses at district centres, all of which should be easily accessible to him. The advantage to the practical working farmer, who can take a full course at an agricultural college, will be largely of a personal character for his own benefit.

This is all in line with the systems of industrial and technical education for industrial and technical workers in Germany and other countries. The working mechanic and also the foreman, in the workshop or factory, receive their education at the continuation schools, and at the lower and middle technical schools. Only those who are to become foremost leaders and directors of industry in a large way, and those who are to teach, take the full course in a technical college.

This is also in accord with the methods followed in Denmark and Germany for the education of farmers and rural communities.

Real Scarcity of Trained Men.

At the present time the supply of competent men obtainable as instructors in agriculture is entirely inadequate to meet the demand. It is important that thoroughly trained men should be available. Men for this educational work need liberal education and practical experience of work similar to that of the department which they are to direct. Their general education should give them a good grounding in the natural sciences, particularly in their relation to the science and art of agriculture. They should have a good knowledge of technical and practical agricultural and farm practice, and have sound acquaintance with the important questions in economics and sociology, as applicable to rural communities. It is also important that they should have a good knowledge of the art of teaching and the underlying principles of it.

It would seem necessary that the district instructor should be a graduate of an agricultural college or have the education of a rural high school and be a graduate of the science department of an arts college. The qualification for a teacher in a rural high school or a county or district agricultural school should not be less thorough and wide.

The First Duty of Agricultural Colleges.

When the agricultural colleges devote far more attention to the training of men and women who will become teachers, instructors and executive officers in connection with the organized system of agricultural education, it will not be necessary and it may not be advantageous for them to give up their 2-year courses and shorter courses.

The holding of short courses in each agricultural college would continue to attract to the college large numbers who might not attend short courses in their own locality, and others for whom more advanced instruction could be provided at the headquarters.

It is not suggested that the agricultural colleges should drop any of the work they have been doing, but that each college should as a first duty direct its efforts to provide suitable courses for men and women required to fill the professional or official positions in connection with the further development of agriculture and agricultural education.

It would seem desirable that the 4-year courses should be specially for those who are being educated to render professional and continuous service in some public capacity; that the 2-year courses should qualify men and women for public work and also serve some who desire to return to their farms and homes; that the 1-year courses should serve also for those who are to occupy positions requiring long practical experience and acquaintance with farm management and less scientific knowledge in connection with county work and illustration farms.

Training of Experts.

Particularly from the action of Germany, France, England, Ireland and the United States, it is evident that the state as a whole regards a supply of thoroughly trained and competent teachers, specialists and leaders as a prime necessity for the promotion of agricultural education and the continuous betterment of agriculture and rural conditions.

While the Commission recognizes the excellence of the work being done at the several agricultural colleges in Canada at the present time, it is of opinion that extensions of their work are required to meet the growing needs of the agricultural population, and to be ready for the provisions recommended for education for rural communities. These extensions should be provided for at once in the following directions:—

1. Courses for the preparation of teachers qualified to carry on the science work and practical work in connection with intermediate rural schools, rural high schools and county or district agricultural schools.

2. Courses for the purpose of preparing district instructors who, in addition to technical and practical instruction in agricultural work, would receive training in the art of teaching and in the administration of affairs in rural communities.

Organization of Local Rural Development Boards.

While these matters are in progress for the training of suitable men in sufficient numbers at the agricultural colleges and elsewhere for directive positions and as teachers and instructors, the organization of local rural development boards should be gone on with.

The first steps to be taken in a county, after the formation of a local rural development board, would be the making of a census survey of the numbers, ages and previous education of the young people needing further education. Early in its work of investigating and planning, the local development board should obtain the advice of an expert or experts, preferably by personal conference after having gone over the ground.

Then a statement of a proposed plan of the development service with the budget could be sent on to the provincial authority. After that, experience, discussion, counsel and co-operation would make the path to follow plain and clear.

In this way Canada could bring into full operation a system of instruction for the whole rural population more complete than has been found in any one country, but not less thorough than is required by Canadian conditions. Canada has need for it and Canada has the means and the men and women to make it effective.

EXTRACTS FROM CHAPTER X OF PART II.

EDUCATION FOR HOUSEKEEPING OCCUPATIONS.

It cannot be insisted upon too much that the occupations of the people have a far-reaching influence and effect on the quality of the national life. The homes are the units on which civilization is based and out of which it grows. For every reason it is important that the girls and young women should be given a chance to develop vocational ability for housekeeping and homemaking.

The influence of the homes on the children is direct and continuous. Good homes minister to the welfare of the people by ensuring conditions under which the

children may be healthy, wholesome and happy, and be directed towards the exercise of right ambitions and aspirations. The effect of the homes on the level of the community is like the influence of the moon on the level of the sea. While individual achievement in any one direction may raise the person to the top, the crest of the wave is only a little above the general level ordained by gravitation and the tide. Good homes well kept keep the tide of life high for the whole of the community and the state.

Other Countries are Doing Much.

In European countries much attention has been given in recent years to the question of the vocational education of women, particularly for housekeeping and homemaking.

A statement of some of the provisions in Germany is given in the report on that country. In the kingdom of Prussia alone there are 50 stationary housekeeping schools, 41 itinerant housekeeping schools, and 3,781 rural continuation schools where housekeeping is taught.

In England, lessons in domestic subjects are provided for in elementary and secondary schools, and also in a number of special polytechnics, particularly for the training of teachers and leaders.

In Ireland much attention has been paid to this branch of vocational education by the Department of Agriculture and Technical Instruction.

The United States has been regarded for many years as leading in the matter of the vocational education of women. If there be any respect in which a comparison of merits might be made to the credit of Europe, it is in regard to the training and qualification of those who are appointed as teachers. The European countries follow the practice of a prolonged and thorough training of those who are to teach, whereas in the United States, as in Canada, a good deal of importance is attached to resourcefulness and ability to make a good showing to the public.

The National Council of Women.

In all countries voluntary associations of women have taken the lead in pressing for improvements and advances in the education of girls and women, and have thereby accomplished much. Their efforts have led to the maintenance of special classes and schools by public authorities. Most of the progress in Germany was due to the work of voluntary associations. Reference has been made in the report on Germany to the Lette-Verein and to the Swabian Women's Society and the Women's Society of Frankfurt.

In Canada several associations of women, notably the National Council of Women, have been active in seeking for the inclusion of provision for the training of girls for housekeeping and home-making in the elementary and secondary schools. Mrs. Lyle appeared before the Commission at Hamilton, Ont., with others representing the Hamilton Local Council of Women. Her statements may be taken as representative of the attitude and desire of other women who testified before the Commission.

Some of the main features of her evidence are as follows:—

In a city like Hamilton, if the early training of the schools is to be fruitful of good results, there should be classes where girls, who do not go to the Collegiate Institute and who are obliged to earn their living, could have further instruction.

A large proportion of the girls leave school at 14 years of age when their public school course is ended, many of them going into factories and stores. The Local Council of Women would like to see day and evening classes established in the Technical School whereby girls would be enabled to continue their studies until they were qualified to enter a higher class, such as a housekeeper's course embracing every phase of work necessary in a well-ordered home. These classes should be open to the children of the well-to-do equally with the girl who works to earn her living; the former needs to supplement her school training as well as the latter.

The present difficulties in Hamilton are two:—

1. Many of the pupils, owing to various circumstances, never enter the Collegiate Institute. They are thus prevented from receiving the instruction given there.

2. The lack of training in domestic subjects prevents them from going to Macdonald Institute or Macdonald College.

The Local Council of Women would like to see service in the home lifted to the same plane as the profession of nursing. The Council does not believe the home should continue to be the only place for which special training is not regarded as necessary.

Elementary Schools.

The Commission is of opinion that preparation for housekeeping should be provided for in all the courses for girls from the age of 11 or 12 onwards. Such part of the courses would be in the nature of pre-vocational education for housekeeping. Such courses are at present provided in many of the elementary schools in all the provinces of Canada. They are provided in the supplementary courses of the public schools in Scotland, at many of the elementary schools throughout England and France.

Two departures from the usual form of organization may be mentioned: in Aberdeen the girls devoted three weeks continuously, before they left the elementary school, to practice and training in domestic subjects. Another example was a residential school maintained by the county education committee at Northampton, England. In this instance, girls in the rural elementary schools might win scholarships. These entitled them to a course of three months' practical training in the county residential school for domestic science. The whole cost to the county education committee, not including charges on capital account, was reported to amount to less than $2 per week per pupil. The school had about 30 pupils in attendance. Other county education authorities in England have similar centres.

Secondary Schools.

The Commission is of opinion that it is desirable to provide secondary education for girls with particular regard to instruction and training in, the preparation and serving of foods, the preparation cleansing and use of clothing, housekeeping includ-

ing ventilation, heating, lighting and sanitary administration. This might be done at the housekeeping department of a technical high school or at a rural high school, with some co-ordination between the home and school work.

Continuation Classes.

The Commission is of opinion that continuation classes for young women, devoted to instruction and training for housekeeping occupations, should be provided in all cities and towns. Attendance at these during at least one period per week should be continued until 18 years of age, unless the girl is receiving some other form of education. These might be arranged for in connection with, (*a*) the public school system, (*b*) a technical institute or (*c*) a separate school such as a middle housekeeping school.

Middle Housekeeping Classes (or Schools).

The Commission recommends that classes be provided for:—

(*a*) Housekeepers who can devote one or more periods per week for a term of three months.

(*b*) Young girls who have left school and who desire training as house-workers and home-helpers.

(*c*) Women in domestic service or seeking to qualify for domestic service.

(*d*) Women employed at industrial and business occupations during the day.

Courses for those who had had experience in housekeeping would be chiefly by demonstrations, instructions, lectures and reading. Particular attention should be given, as in the German schools, to the study of costs and values, to analysis and allotment of income to different classes of expenditure, and to simple bookkeeping.

The courses for those who require it should provide enough practice in cooking, sewing, millinery and housekeeping to enable them to profit in a practical way by attendance.

For those to whom it was practicable, housekeeping projects in the daily work of the home could with advantage form part of the school course.

This school might form part of a middle technical school; but it would appear desirable to aim for a separate institution under separate management.

In carrying on the work of the school a good plan might be to devote forenoons for mistresses in charge of their own homes, afternoons for young girls and for house servants and girls preparing for service, and evenings for those employed at industrial and business occupations during the day.

The Training of House-workers.

The Commission is of opinion that general provision should be made for the instruction and training of those who desire to qualify for service for wages in the homes of the people. Testimony was brought before the Commission from various quarters, to the effect that competent young women are unwilling to accept places as workers in homes because the terms 'domestic,' 'hired girl' and 'house servant' have come to be regarded as indicating a condition of social inferiority which they are unwilling to accept. It appears desirable in the interest of good citizenship to

remove the prejudice which has thus been created, and at the same time to give the house-workers an opportunity for thorough qualification for their duties.

The Commission recommends that short courses of instruction and training in housework and housekeeping should be provided. These might be of from one to six months' duration. The pupil taking a course satisfactorily would upon examination be entitled to receive a certificate of competence as a 'home-helper' or 'house-worker' of the first, second or third class.

It is a trite saying that people are moved more by instincts, prejudice and fashion than by judgment. The harmful notion has spread and is spreading throughout Canada that the doing of housework, and serving as a home helper for pay, is less appropriate for and worthy of young women than serving as office, shop or factory workers. To eradicate that should engage the efforts of women and men who all are directly concerned with home-making and housekeeping.

Resident or Travelling District Instructresses for Housekeeping.

The Commission recommends the employment of instructresses to carry on, for the housekeeping interests of rural districts, work similar to that undertaken by the resident or travelling district instructors for farming.

1. As a beginning, a travelling instructress in housekeeping might meet a class of women, arranged for by a Women's Institute or other similar organization in the locality, one half day per week for a term of 20 weeks.

The other half of the same day the travelling instructress might carry on work with the girls and teacher in the school (elementary, intermediate or high) of the locality.

2. They should be associated when necessary, in the capacity of co-ordinators, with the housekeeping projects carried on at home by pupils attending the intermediate rural schools and the rural high school.

3. These instructresses should provide demonstration lectures in cooking and housekeeping work, chiefly as a means of directing public attention towards channels along which systematic educational work could be conducted.

4. As soon as practicable, they should be associated with the short courses of a county or district school or a middle housekeeping school.

As soon as practicable, they should be associated with the work of a Neighbourhood Improvement Association and an illustration farm for the locality, similar to those arranged for by the Committee on Lands of the Commission of Conservation.

Training Teachers and Leaders.

The Commission is of opinion that advanced education for the purpose of training teachers, instructors and leaders to serve in professional capacities, should be provided in the Colleges of Household Science and Home Economics. Such colleges, by means of short and long courses, would prepare the teachers and instructors for the work of housekeeping education in cities and towns, and also educate travelling instructresses required in connection with the adult population in rural communities. Such courses would be similar to those already provided at some of the Normal

Schools, at Macdonald Institute in connection with the O.A.C., Guelph, Ont., and at Macdonald College, Que.

In this connection it would be worth looking into the organization and courses of study at the Munster Institute, Cork, and the Central Training School of Domestic Economy, at St. Kevin's Park, Dublin. There would be advantage from a study of the courses provided and the work done at the Margaret Morrison Carnegie School at Pittsburgh, Pa. Useful information would be found also from a study of the Domestic Science, Domestic Art and Domestic Industries School in connection with Teachers' College, New York. And the highest form of training, that in the Faculty of Household Science of the University of Toronto, should not be overlooked.

EXTRACTS FROM CHAPTER IX OF PART III.

SCHOOLS FOR FISHERMEN AND SCHOOLS OF NAVIGATION.

Introductory.

The fishery interests of Canada are important, not only because of the annual value of the catch and of the by-products, but because of the large number of men employed in them and of the population depending upon revenues from them. As illustrative of this, the following quotation is made from the testimony before the Commission of Mr. John Sinclair, M.P., and at that time Chairman of the Parliamentary Committee on Fisheries:—

No system of technical education in Nova Scotia would be complete if it did not deal in some way with the fishery industry which annually produces some eight millions. Nova Scotia stands first in all the provinces of Canada as a fishing province employing about 25,000 men, who represent 125,000, or about a quarter of the population of the province. The fishermen are scattered all along the coast in villages on the Atlantic, the Gulf, and the Bay of Fundy. The business has changed of late years by the introduction of motor boats, and it is necessary that fishermen should understand the machinery of them, and also build their own boats, as well as market and pack their catch.

That there is great room for improvement, and need of improvement, in the way in which the curing and other preparation of fish for the market is carried on, is made evident by the testimony before the Commission of Mr. Howard H. Smith of Halifax. The following are taken from his statements:—

The government should collect and distribute more intelligent information with regard to habits and movements of mackerel, herrings, cod, &c. The prevailing winds, currents, and temperature of the water all affect the bait fishes, and govern the movements of the food fishes. Our fishermen are quite ignorant of the known fact that fish are only obtainable in water of a certain known temperature, and that it is wasting time to try for them otherwise.

The Norwegian government takes a fatherly interest in the industry there and by technical education and practical demonstration secures best results for its men. Norwegians never think of setting nets for mackerel, herring, &c., without testing the temperature of the water. They split their pickled fish a few hours after capture, and wash it in running water, thereby extracting all blood, and making the flesh perfectly white; then pack immediately in export packages, keeping the original pickle on the fish and conserving its pristine flavour. Result:—Norway mackerel commands 100 per cent more money than equally fat and exactly similar (out of the water) Nova Scotia cure.

Our fishermen put mackerel in puncheons to soak in bloody water, and pack weeks afterwards, losing the entire flavour of the fish. They *economize* by buying a cheap barrel which will not hold pickle. Result:—rusty, discoloured fish, worth $6 a barrel instead of $15. It sounds strange, but is absolutely true.

Listen to this also. A Lunenburg banker will wash, 1,000 qtls. of green fish in the same water, in order to save a few barrels of refuse for fertilizing:—value, 50c. per barrel, total,

$2 50; and deteriorate value of catch 50c. per quintal, total, $500; nett loss, $497.50. I can prove the absolute truth of this happening time and again. The old fishermen refuse to change their antiquated methods; the government will have to educate the young by training several brainy, enthusiastic young men who will devote their time to teaching up-to-date methods to the fishermen and their children.

The same question as applied to another kind of fish was touched upon in the testimony of Dr. Edward Prince, Dominion Commissioner of Fisheries. In reference to herring he said that several schemes had been attempted by the government for the improvement of the curing and packing of them.

One was to improve the salt sea herring of Canada, packed in barrels which only brought $3 or $4 a barrel while Scotch cured herring realized from $10 to $15 a barrel. When the question was put as to why Canadian herring were so low in price and so little esteemed, it was said that they were inferior fish; that our Canadian herring are not equal to Scotch herring when in the sea; that the fresh Scotch herring is a better fish. On my suggestion to the Minister of Marine and Fisheries, it was arranged to bring out an expert curer and cooper to make barrels, and six or eight curers who gut the herring—what we call 'gutters' in Scotland—and they were stationed at Canso and down at Clark's Harbour. They also went out to British Columbia and different points. They fixed up a small curing establishment and put up herring. A great many fishermen went there and saw this, and the result of the experiment was that herring quite equal to any cured herring in the world were produced out of our Canadian herring. Good barrels of herring were put up and shipped away to New York, some to St. Petersburg, etc.

Some Conclusions.

From the testimony submitted to the Commission, the needs of those directly engaged in fisheries appear to be of two kinds. One is connected with the catching, curing, packing and marketing of fish, and the other with the managing of engines or other machinery used in modern vessels and having sufficient knowledge of navigation.

The Commission is of opinion that, in the interests of the fishermen and the fisheries of Canada, further improvements and extensions of what at present is being done should be made by the following means:—

1. The issuing of simple and well illustrated bulletins for the service of fishermen, similar in plan to those issued by the experimental farms and agricultural colleges.

2. The employment of travelling instructors to give short courses of demonstrations suitable for fishermen at centres easily accessible to them.

3. The provision of short courses of from one to two weeks' duration similar to those which are described as being given at Piel, near Barrow-in-Furness, England. and at Aberdeen, Scotland.

4. The inclusion of nature study, in connection with marine life and fishing, and some suitable practical work for the pupils in the elementary and secondary schools in fishing communities.

5. The provision of winter schools for fishermen having courses of instruction of two kinds, one kind dealing chiefly with the life and habits of fish, methods of catching, curing, packing and marketing; the other kind dealing with matters of navigation, and including courses of instruction in the use of engines, machinery and mechanical plant used in the industry.

6. The establishment of one or more central schools (*a*) for the maritime provinces, (*b*) for the St. Lawrence, (*c*) for the Great Lakes, (*d*) for the Pacific Coast,

to provide courses of instruction similar to the winter schools, but more advanced in character.

After a time one or more of these central schools might provide the highest forms of scientific instruction for those who would be required as technical experts. Either the winter schools or these central schools, if located near a fish hatchery, could be used for the technical and scientific instruction of hatchery officers.

ACKNOWLEDGMENTS.

We have already stated that we had 'conversations' with many men and women, eminent and wise in educational affairs, in the several countries visited. We appreciate most heartily the service they rendered us and we venture to hope that, by means of the publicity given to the information contained in the report of these 'conversations,' they may render useful service to very many persons in our country and perhaps even wider service in their own. We recognize that their contributions form one of the most valuable of the constituent elements of the whole Report.

We regret that one member of the Commission, M. Gaspard de Serres, of Montreal, was unable to accompany the Commission during its inquiries in Europe and the United States. During such periods his place was filled by Mr. Ernest Belanger, B.A. Sc., of Montreal. We desire to record our appreciation of the diligence, thoroughness and ability with which Mr. Belanger assisted the Commission in the discharge of its duties. He rendered valuable help in preparing the report of the inquiry in France.

During part of the inquiry in the United Kingdom and on the continent of Europe the Commission was accompanied by Mr. Frederic H. Sexton, Director of Technical Education and Principal of the Nova Scotia Technical College. Principal Sexton was sent abroad by the Government of Nova Scotia and his expenses were paid by that Government. He made application to be permitted to accompany the Commission. That was granted on the understanding that it would continue and extend only so far as it would not hinder, or interfere in any way with, the work of the Commission. As a matter of fact the company of Professor Sexton, during the whole period his time permitted him to be with us, was a distinct advantage and benefit to the Commission, particularly during the inquiry in Germany. We wish to record our appreciation of Professor Sexton's professional ability and his helpfulness and geniality.

We cannot speak too highly of the diligence and the good service rendered continuously by Mr. Thomas Bengough, C.S.R., Toronto, Secretary and Reporter to the Commission.

OUR FINAL WORD.

From all the Commission learned in its survey of industrial, housekeeping, agricultural and educational conditions, it does not appear that the present generation can fully discharge its obligations for life and other heritages, or enter upon the full enjoyment of its rights and opportunities, by mere payments of money for education. The various forms of education must be supported more than they have been by the

personal effort and service of parents and others. These must be given on behalf of the instruction and training of the young, together with adequate financial support of schools.

As a final word, we wish to express our appreciation of the opportunity that has come to us to render a great and lasting service to Canada, and to acknowledge the unfailing consideration which has been extended to us by the Minister of Labour and his department.

All of which we most respectfully submit.

Dated at Ottawa, the 31st day of May, 1913.

JAS. W. ROBERTSON,
Chairman.

JOHN N. ARMSTRONG,
GEORGE BRYCE,
G. De SERRES,
G. M. MURRAY,
DAVID FORSYTH,
JAMES SIMPSON.

THOS. BENGOUGH,
Secretary.

INTERIM STATEMENT BY THE COMMISSION.

Ottawa, March 28, 1911.

To the Hon. W. L. Mackenzie King,
Minister of Labour.

Sir,—We have the honour to submit to you a statement of the work of the Commission to this date. It has been arranged as follows:—

I. The plan of work adopted by the Commission and a summary of the inquiry conducted.

II. The equipment found throughout Canada in respect to industrial training and technical education; and

III. A survey of the testimony received at the sessions of the Commission.

I. THE PLAN OF WORK ADOPTED BY THE COMMISSION AND A SUMMARY OF THE INQUIRY CONDUCTED.

It is considered unnecessary to recite the steps which led up to the appointment of the Commission by the Government of the Dominion, but for the sake of clearness and completeness a copy of the order in council and of the Commission itself is attached hereto. Copies of the correspondence which passed between yourself, as Minister of Labour, and the premiers of the several provinces in respect to this matter have also been attached.

The several members of the Commission, having been notified of their appointment, were invited to meet you as Minister of Labour at the Department of Labour on July 6, 1910. All the members, together with the secretary and reporter to the Commission, were present. After hearing from you a statement giving an outline of the work expected to be done by the Commission and the nature of the inquiry it was to conduct, the Commission was duly constituted, and immediately proceeded to make plans for carrying out the duties assigned to it by the Commission itself, as well as by the directions given by you.

It was decided to visit the chief industrial and commercial centres throughout Canada, beginning at Halifax, N.S., and crossing the Dominion to Vancouver Island. Itineraries were duly drawn up and notifications of the intended visit of the Commission were sent in advance to the mayor, to the president or chairman of the board of trade, and to other persons in each locality directly engaged in, or concerned with, the industries and education.

Our duty, as set forth in the order in council and in the Commission itself, requires us to make full investigation into the matters of industrial training and technical education, in so far as these can promote industrial efficiency, which 'is all important to the development of the Dominion and to the promotion of the home and foreign trade of Canada in competition with other nations.' In the discharge

of that duty the Commission has given our attention to the manufacturing industries, to agriculture, to domestic occupations, to mining, to the fisheries, to the lumber interests, to the building trades, to the transportation services, as well as to the technical training required for commercial operations.

The Commission has also made inquiry into the needs of existing industries in respect of labour, the quality of labour which is available, and requirements of such labour for industrial training and technical education.

The Commission began its work of inquiry at Halifax, N.S., on July 18, 1910. It continued to visit places in the maritime provinces until August 26. After that date the chairman left the Commission for a time to fulfil an engagement he had with the government of Newfoundland. At the same time other members of the Commission went to the Canadian National Exhibition at Toronto.

Between August 30 and September 16 the Commission did its work in two divisions, and visited fourteen of the smaller industrial towns in the province of Ontario.

On September 19 the Commission as a whole reassembled at Montreal. That week was devoted to Montreal, Macdonald College and Quebec city. Conferences were held with representative men and women at Montreal, and arrangements duly made for the presentation, at a later date, of testimony from the various interests concerned with industrial training and technical education in Montreal and its neighbourhood.

On September 26 the Commission resumed its itinerary in the province of Ontario.

From November 1 until the first week of December the Commission visited places in Western Canada, beginning at Port Arthur, Ontario, and ending at Victoria, B.C.

On the return journey the members visited cities in the Western States where trade schools and other methods of industrial training had been established. A list of the places visited is submitted together with some notes on the institutions which were examined. The full report on these will be included with the reports of the visits of inquiry to the United States, to be made after our return from Europe.

During January and part of February the Commission revisited Toronto, carried out its inquiry at Sault Ste. Marie, Ontario, and in places in the province of Quebec; and held final sessions at Ottawa.

The Commission has visited 100 places (cities, towns and important localities). It has held 174 sessions to receive testimony. It has transcripts of the evidence of 1,470 men and women. Written memoranda were requested from or offered by a number of these witnesses. One hundred and eighty such documents have been received and are on file with the Commission; others are still coming to hand.

In every province the Commission requested an opportunity to wait upon the Provincial Government, and it was received by the Premier with other members of the provincial cabinet, or by some member of the cabinet designated by the Provincial Government to receive us. As directed by you, the chairman conveyed to the Provincial Governments the message expressing the appreciation of the Dominion Government of the offers of co-operation and assistance which had been extended by the provincial authorities to the Commission. In every province the Commission received, not merely assurances of good will, but had the benefit of willing and helpful co-operation.

The halls or rooms for the holding of the sessions had been arranged for in every case by the local authorities. The following instances are illustrative of the other places:—

Halifax, N.S.—Provincial Technical College.
St. John, N.B.—Board of Trade Rooms.
Fredericton, N.B.—Chamber of Legislative Assembly.
Charlottetown, P.E.I.—Chamber of Legislative Assembly.
Montreal, P.Q.—*City Council Chamber.
Quebec, P.Q.—City Council Chamber.
Toronto, Ont.—City Council Chamber.

In the several localities the Commission visited industrial establishments and educational institutions during either the forenoon or afternoon or both. Sessions for receiving testimony were held during the evening; and when necessary, also during the afternoon or forenoon, instead of visits for observation. The Commission was usually met on its arrival by the mayor of the place and the members of a reception committee, representing the city or Town Council, the Board of Trade, the Manufacturers' Association, the educational institutions and the labour organizations.

As a rule the local authorities provided the vehicles—usually automobiles—for getting around to the various establishments. These were always provided free of cost to the Commission.

The first session at each place was opened by the reading of the King's Commission. Then followed a brief address of welcome and a statement of the general character of the city or town in respect to industries and education, by the mayor or chairman of the reception committee. The chairman of the Commission made a brief statement explanatory of the object of the Commission, and the way in which its inquiries were conducted. Usually a list had been obtained from the local committee of representative men and women, who were prepared to testify regarding the need and present equipment of the place in respect to industrial training and technical education. The statements were taken under oath or solemn affirmation. The information was usually secured by means of question and answer. The chairman conducted the examination in chief and each of the other Commissioners in turn asked questions as he saw fit. The witness was given an opportunity to make any statement bearing on the matters inquired into, and to supplement his oral testimony by a written statement. Many of the persons occupying the most important positions in industrial activities and educational administration were requested to furnish written memoranda. Opportunity was given to any person who desired to offer testimony, either orally or in writing. No one was summoned officially to appear before the Commission. Invitations were extended to representative men and women. Those who have testified did so with evident frankness, and appeared satisfied that they had thereby contributed something useful in respect to industrial training and technical education, and in regard to the needs of the industries and the needs of the young people and workers of the locality.

The members of the Commission have been impressed by the numbers of thriving industries in comparatively small towns. Throughout all the eastern provinces many

* Sessions held also at the Monument National, McGill University and the Board of Trade

establishments were visited, from which the products were being shipped throughout the whole of Canada. These towns enjoyed no special shipping facilities or any apparent advantages in regard to cheap power or nearness to raw material. The enterprise, ability and energy of a few men have enabled them to make the beginning upon a small scale from which businesses employing from 50 to 200 persons have grown up. Factories were situated where abundance of fresh air and light prevailed, and where the workmen could provide homes under favourable conditions for their children. As instances, we mention a furniture factory located at Windsor, N.S., with its products being shipped throughout Canada, nearly one-half to the west of Winnipeg, and a portion to Newfoundland. Windsor, N.S., is not even on the main line of a through railway.

At Truro, N.S., there is a cap factory, reported to be turning out nearly one-half of the caps required by the Canadian trade, making headway under all existing competitions.

At Charlottetown, P.E.I., a machine shop was turning out gasoline engines, one-half of which were being shipped west of Winnipeg. About 100 men were employed and they were working overtime.

At Sackville, N.B., a stove works was doing a local trade and also supplying its products throughout the Northwest. The manager stated that the cooler temperature of summer and the other favourable conditions for the workmen gave sufficient advantage to enable him to increase the business.

At Fredericton, N.B., a shoe factory employing over 100 persons was shipping boots and shoes to Montreal, to Moosejaw and other points in the West.

At Victoriaville, Que., we found four prosperous industries—furniture, chairs, iron bedsteads, clothing—all reported to have grown up within seven years. The products from each were being shipped all over Canada, in each case about one-half to points west of Winnipeg. We saw one carload at each of two factories loaded for Vancouver, B.C.

Instances of similar development and extension of trade could be cited from a score of places in Ontario. Those mentioned are typical and not exceptional. It has been made evident that the industrial development of Canada has not been going on only in the larger towns and cities.

The Commission observed the establishment and growth of comparatively new industries whose managers testified that they required increasing numbers of highly skilled and technically trained workers, as for example, electrical works and automobile factories.

II. THE EQUIPMENT FOUND THROUGHOUT CANADA IN RESPECT TO INDUSTRIAL TRAINING AND TECHNICAL EDUCATION.

Provisional summaries have been made of the information obtained regarding the present equipment of the Dominion respecting industrial training and technical education. These are arranged as underneath and are submitted herewith:—

A. Universities, colleges, and experiment stations.

B. The equipment and courses at secondary schools and public schools with particular reference to shopwork, manual training, domestic science and nature study with school gardens.

C. Night schools and evening classes for industrial training and technical education.

A provisional survey of what is contained in these summaries indicates that at many places in Canada, as enumerated in them, a good beginning has been made.

There is hand work of some sort—hand-and-eye training—in the elementary grades of many schools from the kindergarten up. In a number of towns there are courses in manual training and household science; and other places are planning to introduce them. That is part of general education for development, for culture and for citizenship; and it is also preparatory education to which industrial training and technical education will piece on without waste.

A beginning has been made in technical education in secondary schools in Montreal, Toronto, Hamilton, Sault Ste. Marie and Halifax. Technical and commercial high schools in Montreal and Toronto are carrying on day and evening classes The evening classes are attended almost wholly by young men and women who are working in some factory or shop or office during the day or are engaged in the building trades. New technical schools have been established at Montreal and Quebec but classes in them have not yet begun. Winnipeg is erecting two new technical high schools at cost of $700,000. There are good night schools for the workers in places like Montreal, Quebec, Toronto and Vancouver, but not much opportunity in the way of classes in the smaller cities and towns where the man who earns his living by craftsmanship or in industrial work can get a further training.

Several colleges and universities provide courses of a partially technical character for what may be called the technical professions. Principal Falconer, of Toronto University, was disposed to call the education provided formerly by the School of Practical Science and now by the Faculty of Applied Science of the university, 'professional and not technical.' The institutions where the most advanced courses are provided are the University of Toronto, McGill University, the Polytechnic School of Laval University, the School of Mining of Queen's University, the Nova Scotia Technical College and the University of New Brunswick.

The Agricultural Colleges which are intended primarily for the technical education of farmers also give courses to qualify students for entering upon professional work related directly to rural occupations.

The Ontario Agricultural College at Guelph, with the Macdonald Institute on adjoining grounds, receives men and women. The courses include the various branches of agriculture, household science and manual training. An illustration consolidated rural school rounds out the equipment. During recent years some of the teachers-in-training go from the Normal Schools of Ontario to the Ontario Agricultural College for a special course of some ten weeks in nature study and elementary agriculture.

Macdonald College at Ste. Anne de Bellevue, Que. (which is a College of McGill University), carries on its work in three schools: the school of agriculture, the school for teachers and the school of household science. It also has a Macdonald Illustration Rural School with a model school garden.

The Agricultural Colleges at Truro, N.S., and Winnipeg, Man., do similar work suited to the needs of their provinces. Buildings are in course of erection at Saskatoon for the College of Agriculture as a part of the University of Saskatchewan. Extension teaching and demonstration work for the rural populations are promoted and assisted by the Agricultural Colleges in all the provinces.

III. A SURVEY OF THE TESTIMONY RECEIVED AT THE SESSIONS OF THE COMMISSION.

Of the 1,470 men and women from whom testimony has been received, some occupy foremost positions in industries, agriculture, mining, lumbering and fishing; others are engaged in educational work, including the superintendents of education, principals of universities and colleges and teachers in institutions and schools of all grades; and others represent the various trades and occupations.

The transcript of the evidence received by the Commission during its 174 sessions amounts to about 4,030 typewritten pages of foolscap size. A first analysis of it has been made and summaries have been arranged under marginal designations, according to the plan on the sheets which are attached hereto.

In general the testimony has been to the effect that provision for industrial training and technical education, in institutions and in industrial establishments, exists in comparatively few places, and in them not to an extent adequate to the needs of the industrial population.

Some of the chief matters which have come before the Commission from witnesses are presented in the following paragraphs in so far as the testimony in regard to particular industries and localities can be summarized into general terms:

The system of training young men and women as apprentices, is becoming less common than formerly. In some trades it has disappeared as a system and learners are expected and required to pick up the trade as best they can. The introduction and use of machinery where hand labour was formerly employed is given as one of the chief causes for the change. In a few shops, notably the shops of the railway companies, instruction classes and systematic instruction in the shops and at machines have been provided to meet the new conditions.

The rapid development of the country and the growth of towns and cities, have provided the lure of relatively high wages for boys and girls of 14 years and younger. That attracts them to leave school early. Frequently such young people accept places and begin work for which little training is required and in which experience does not lead to the acquisition of ability or skill in a trade or occupation which affords permanent employment or is suitable for mature years. At least part of a remedy would come through schools or courses of study which provided more hand work of a constructive kind.

The testimony was substantially unanimous in indicating that in respect to industrial training and technical education the following are among the pressing needs of the people:

(1) Some opportunity in all schools for boys when they are past twelve, whereby the boy will gain experience in constructive hand work as well as book work and thus

reveal to himself and his teacher and parents the bent of his ability to an extent that will give an indication of what he should choose, and how he should prepare, for his life's work.

(2) Provision for the boys from twelve to sixteen who intend to go into some skilled trade, to learn in school how to use common hand tools for wood and iron and the qualities of common materials. A few of these are fundamental to most industrial occupations.

(3) Courses or schools, of high school or academy grade, adapted to the boys who are going into industrial life. Such schools or courses to give them preparation for their future work equivalent to what the present high schools give to the boys going into the professions.

(4) Some education to make up to the boy, after he begins to work, for what he does not now get through lack of an apprenticeship system, some forenoon, afternoon or evening classes to give him the further knowledge of mathematics and mechanical principles; and also some variety of shop work, to develop the skill of hand and the all-round ability in some trade, which the apprentices formerly got by their long and practical training. The manufacturers and other employers of labour have expressed a willingness to co-operate in helping to make such classes and courses effective.

(5) Evening schools for workmen in the smaller cities and towns to fit them for advancement and promotion.

(6) Some enlargement and improvements of the means whereby farmers' children may learn the elements of the scientific principles which underlie rural occupations such as the growing of crops, the feeding of live stock, the fighting of weeds, insects and plant diseases, and the maintenance of fertility and beauty, and the same in more advanced forms suited to the farmers themselves.

(7) Instruction—the means and opportunity for instruction—of a similar character suited to the lives and occupations of the fisherfolk, and those engaged in the mining industries.

(8) Classes and courses for the training of women and girls to give them clear concepts of the sanitary conditions which make for the safety, comfort and economy of the home; correct ideas of economical ways of providing food and garments and of using fuels; and some practice in domestic art that will further enable them to reveal and enjoy their love for the beautiful by making beautiful things for the house.

(9) Correspondence study courses for persons who are unable to avail themselves of schools and classes; and the advantage to such persons of visiting instructors in connection therewith.

(In this connection it is to be noted that, from the many statements made to the Commission, it would appear that several hundred thousand dollars per annum have been paid by Canadians for correspondence courses provided by American institutions. Those who had taken the courses, or were taking them, testified that they derived benefit; although only a small percentage of the number appear to have carried the work through to the end of the course.)

(10) Intimate correlations and co-operations between those who manage industries and factories, the men and women most skilled in their trades and occupations, and the managers of the schools and classes where workers are trained.

A great deal of testimony was presented indicating that properly organized hand-and-eye-training with constructive work, was helpful in developing the powers of children from the kindergarten classes upward. The teachers who had experience spoke highly of its value in qualifying the children to take up bench and table work in manual training and domestic science in later years; they also testified that the hand work contributed to the progress of the pupils in what are called book studies.

The survey made by the Commission has revealed a great measure of interest throughout the whole of Canada in the subject of industrial training and technical education.

The representatives of all occupations and interests, who testified, gave the Commission the impression that they expect further action to be taken in the near future in all the Provinces, such as will result in meeting the needs which have been indicated by their testimony.

A number of persons, occupying important and influential positions in industry and education, expressed the opinion that the Dominion Government should in some way assist in developing industrial training and technical education by granting financial assistance.

All of which is respectfully submitted. By direction of the Commission,

JAS. W. ROBERTSON,
Chairman.

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ROYAL COMMISSION

ON

INDUSTRIAL TRAINING AND TECHNICAL EDUCATION

REPORT OF THE COMMISSIONERS

PART II

PRINTED BY ORDER OF PARLIAMENT.

OTTAWA
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1913

ROYAL COMMISSION ON INDUSTRIAL TRAINING AND TECHNICAL EDUCATION.

OTTAWA, 31st May, 1913.

The Honourable T. W. CROTHERS, K.C., M.P.,
Minister of Labour.

SIR.—By direction of the Royal Commission on Industrial Training and Technical Education we most respectfully submit Part II of the Report.

JAS. W. ROBERTSON,
Chairman.

THOS. BENGOUGH,
Secretary.

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CHAPTER I: ELEMENTARY EDUCATION IN RELATION TO INDUSTRIAL TRAINING AND TECHNICAL EDUCATION.

SECTION 1: ELEMENTARY EDUCATION IN GENERAL.

There was a general agreement of opinion, as expressed to the Commission, that Elementary Education in Canada affords satisfactory preparation for entering Secondary Schools, but that it does not give the kind of training or the kind of knowledge which should be possessed by those who leave school at 14 years of age or thereabouts and enter upon industrial, agricultural or housekeeping occupations. Considerable changes have been introduced during recent years to give such pupils a more specific preparation for their life work. Manual Training has been introduced partly with this object in view and partly for its cultural influences on the general powers of the pupils. Domestic Science finds a place on the programme chiefly for its practical value; School Gardens have been taken up and Nature Study has been extended particularly for the purpose of cultivating the powers of observation and increasing the knowledge of the children concerning the things of Nature which lie close to them and all about them.

Pre-Vocational Work.

More recently in several other countries the activities of the children during the last year or two of their attendance at school give them a definite preparation for the vocations which they will follow. For a long time the only vocations which the schools intentionally and definitely prepared for were those of the learned professions. Now in public Elementary Schools in England, Scotland, France, the United States and elsewhere the children do work at school with materials and tools from 12 years of age and upwards for the definite purpose of giving them industrial and technical (trade) preparation for the occupations they are to follow. This education is closely co-ordinated with the other or literary part of the schoolwork wherever that is practicable with advantage to the pupil.

In London and other places in England, at the age of 11 to 12, children whose parents so desire may receive education for 2 or 4 years in schools with what is called an industrial bias, or a commercial or domestic occupations bias. In some other places this is called Supplementary Education, or Pre-Vocational Education, or Trade-Preparatory Education. The object is to combine with the work of the Elementary School such series of experiences as will qualify boys and girls upon leaving school to enter upon occupations with as much preparation as is practicable, considering their age, strength and capacity.

The industrial bias means that the courses give the pupils experiences of such a sort as to awaken their interest in industries and their processes and products, and to increase their knowledge concerning these. The courses are arranged to develop ability and understanding by practice in doing work of a kind as nearly similar as possible to that of the industries themselves.

Some Conclusions.

From the testimony received it appears highly desirable in the interests of vocational efficiency,—

That all children to the age of 14 years should receive the benefits of elementary general education up to at least the standards provided by the school system of the place or province where they live;

That the experiences of the school should tend more directly towards the inculcation and conservation of a love of productive, constructive and conserving labour;

That, after 12 years of age, for the children whose parents expect or desire them to follow manual occupations, the content of the courses, the methods of instruction and the experience from work undertaken at school should have as close relation as practicable to the productive, constructive and conserving occupations to be followed after the children leave school.

The Commission is further of opinion,—

That benefits from such Pre-Vocational education would accrue (a) from the interest awakened in manual occupations; (b) from the discovery through their experiences at school to the pupils themselves, and to the teachers and the parents, of the bent of their abilities and aptitudes; and (c) from the taste and preference thus developed leading the children to follow skilled occupations for which they are suited;

That further advantage would result because the interest which this form of education would arouse in the children would dispose them to desire further education after they had begun to work, and cause them to keep in touch with educational effort in some form;

That the time and attention devoted to Pre-Vocational or Trade-Preparatory work in no way detracts from or hinders progress in general education of a cultural sort.

SECTION 2: ELEMENTARY EDUCATION FOR VOCATIONAL EFFICIENCY.

Important Considerations.

The kind and amount of Industrial Training and Technical Education which an individual is able to take up and profit by is determined to a large extent by the previous general education. General education is here taken to

mean the formal studies in reading, writing, drawing and arithmetic, together with the experiences got from association with others in work, in play and in social intercourse, which have developed the powers of mind and body and have furnished the knowledge possessed by the individual.

Those who have this general education in hand will best provide for subsequent vocational efficiency by ever bearing in mind the following propositions:—

I. It is important that health should be protected and preserved.
II. It is important that the harmonious growth of the powers of body, mind and spirit should be fostered.
III. It is important that the senses, the avenues of impressions whereby knowledge is acquired in the first instance, should be trained.
IV. It is important that ability and desire to work and play with enjoyment, intelligence, skill and energy should be developed.
V. It is important that good habits should be formed, particularly habits of obedience, courtesy, diligence and thoroughness.
VI. It is important that proper standards of conduct and character should be maintained and that high ideals should be followed.

The schools of Canada accomplish much towards these ends, but in order that their pupils may be prepared to profit to the fullest extent by Industrial Training and Technical Education, the evidence which has been received by the Commission requires us to submit the following suggestions regarding general Elementary Education, for its improvement, extension, enlargement and enrichment.

I. Training of the Senses and Muscles.

Provision should be made from the beginning for series of experiences whereby the senses and muscles would be trained and developed, as by the Kindergarten and the Montessori Methods, followed throughout all the elementary grades by appropriate Construction Work and Drawing. Tasks with a meaning which appeal to the pupil furnish better lessons than mere exercises which do not call forth willing and purposive effort. They should be arranged to ensure the training of,—

The Sense of Seeing, to discriminate closely between forms and sizes; the Chromatic Sense to distinguish between colours and shades of colours;

The Sense of Feeling to discriminate by touch, temperature and weight;

The Sense of Hearing, to discriminate quickly and closely between sounds;

The Muscles by such conscious and purposive movements of the arms, hands and fingers, in co-ordination with the eye and also blindfolded, as would develop what might be called muscular aptitude and muscular memory.

II. More and Better Drawing.

Provision should be made in all schools for practice in Drawing. Nearly all children, from five years of age, have a desire and some ability to make "Pictures". They should be encouraged and directed to represent their impres-

sions and thoughts (mental images or pictures) in form and colour. Such efforts lead to habits of careful observation of whatever thing is being studied. Material from Nature is the best subject matter; next, objects in common use. Making copies from flat drawings, before considerable facility has been acquired in representing forms and colours, appears to be a waste of time. The teacher can render most help by suggestive enquiry and by leading the pupil to compare the drawing critically with what it purports to represent.

III. More Physical Culture.

Physical Culture, co-ordinated with the training of the senses and muscles, should be part of general education in all schools. The series of experiences provided should have regard to the preservation of health, the exhilaration of recreation, and the harmonious development of the powers of the child through directed and willing control of the body, in movement, in repose, in action, in work and in play.

IV. Nature Study and Experimental Science.

Nature Study, from its beginnings in the observation, consideration and recording of common phenomena, particularly in those out-of-doors, leads naturally to the use of those sciences called Biology, Physics and Chemistry. At this stage a simple laboratory is necessary. It need not be elaborate in its appointments. Systematic study by experimental laboratory methods would be of advantage, whether a pupil is to go directly to work after leaving the Elementary School or on to a Secondary School and perhaps later to a College.

V. Pre-Vocational Work.

There should be differentiation in the instruction and the activities of the pupils after the age of 11 or 12, with due regard to the occupations which they will probably follow. Series of experiences at school may be entirely educational and at the same time prepare the pupils for carrying on the operations and processes which are common to groups of fundamental vocations, such as the agricultural, industrial, commercial, housekeeping and professional. They have to do, as far as materials are concerned, chiefly with soil, plants, clay, paper, wood, textiles, metals, leather and foods.

VI. More and Better Singing.

Class Singing of good songs, and singing by the school in mass, should be encouraged as a means for cultivating the patriotic spirit and the control of the expression of emotions. Singing should provide frequent recreations for the feelings during every school day. From three to five minutes when lessons are changed would suffice. The cultivation of a love of good music and the development of ability to sing would naturally follow.

There are many benefits from frequent periods of enthusiastic singing in class and in mass; and also advantages from periods of immobility and silence. But few schools, outside Germany and Denmark, have learnt the value of such alternate experiences as preparation for quick and clear receptivity and correspondingly clear and competent power of expression.

VII. Play and Games.

Organized and Supervised Play and Games should be provided as a regular part of the school course. Some attention should be given to such forms of play, games and recreation as could be continued by the pupils and followed with enjoyment and benefit after they become adults.

Relief of the Time-Table.

It is to be remembered that these suggestions do not imply the introduction of any new subjects into the course of study. The relief of the time-table from the pressure of a multiplicity of separate subjects as such is an evident necessity. The work of the school should gradually be arranged less and less on subjects as such and more and more on occupations, projects and interests, each of which would form a centre for the correlated study of several subjects such as reading, composition, number work, writing and drawing.

The Formation of Habits.

Educational progress towards efficiency for working is made when the individual pupils form the habit of treating every lesson, when practicable, as a cycle of activities including:—

Attending and responding, that is reacting with purpose, to material things, forces and thoughts;

Observing closely and, by the aid of knowledge already possessed and by experiment or inference, using impressions obtained to form new ideas or concepts;

Reflecting on the increased content of the mind by holding ideas in relation to each other and planning for subsequent co-relative expression;

Expressing thoughts, feelings and purposes in various forms, such as, speaking, drawing, writing, making, modelling, painting, acting, singing, etc.

Applying the knowledge thus acquired to new cases and reasoning to conclusions in general principles, thereby gaining new power and ability for reacting, observing, reflecting and expressing.

Impression and expression have a reciprocal relation, the permanence of the impression depending on the interest felt in the expression, and the truth of the expression on the clearness of the impression. The educational value of both is the extent to which they form habits serviceable for the practical needs of daily life.

The processes indicated in the foregoing paragraphs are not wholly separable from each other. That form of statement is used for convenience of explanation. The point is that the lesson or lessons, which constitute an educational project or occupation, should not stop short of the full cycle of experience in observing, reflecting, expressing and reasoning to conclusions as indicated. Such a use of the matter to be dealt with in lessons would naturally result in the carrying over of the ideals of such procedure into other activities. In consequence we might reasonably expect the formation of habits such as:—

Managing the self and things with ever lessening waste of time, force and material;

Co-operating with others to give objective expression to innèr conceptions through working, playing and living.

Biological and Social.

Since education is recognized as having two chief functions of service, one biological and the other social, it can doubtless serve individuals better by the discharge of those functions concurrently, than by separating them for attention at successive stages. Whether stress should be laid on one more than another at different times during the period of education is a question for the teacher. Education being for individuals who are living in a world of things (animate and inanimate), of forces (personal and external), of ideas and of emotions, it must attempt to train for useful, happy life by methods which recognize all these factors at every stage of educational progress.

Having regard to the fact that all education is for life, and that the occupation absorbs a large proportion of the strength and time of life, it appears wholly desirable that education at the school or elsewhere should prepare for occupation by having the pupils over 12 years of age participate in the activities of some fundamental occupation, as well as receive intellectual instruction.

Further Conclusions.

The Commission is of the opinion,—

(1) That education should have regard to the growth of the powers of the body, mind and spirit concurrently, and that it should have regard to the preparation of the pupil for later life as an individual, as a working earner, as a citizen and as a member of the race;

(2) That education should be provided of a kind suitable to meet the needs arising from the changes in the nature and methods of occupations, the manner of living and the organization of society;

(3) That existing institutions, in so far as necessary, should be modified or altered and have additions made to the courses of study or kinds of work taken up;

(4) That the preparation of teachers for the new and different kind or kinds of education is a first necessity and duty in order that they may be qualified to do the new work successfully;

(5) That such improvement, extension, enlargement and enrichment as have been indicated would let the school experiences become a reasonable preparation for beginning working life and entering upon Industrial Training and Technical Education; and that without such preparation no system of Industrial Training and Technical Education can, to any considerable extent, be permanently successful.

Some Recommendations.

The Commission is of opinion that the teaching of Drawing, Manual Training, Nature Study, Experimental Science and Pre-Vocational work (including Domestic or Household Science) in Elementary Schools is of great importance and value and should be provided for generally.

Having regard to the cost of carrying on these branches in the Elementary Schools, until teachers are available who themselves have been taught them during their school days, and bearing in mind that such school work was not contemplated as part of public education at the time of Confederation when the Provinces accepted the responsibility of legislating for the maintenance and control of education within their borders, the Commission ventures to recommend that a Fund be created from which payments would be made to the Provincial Governments during a period of ten years.

The Commission suggests that such a Fund should receive not less than $350,000 a year for ten years from a Dominion Parliamentary Grant; and that it should be divided into nine portions, in proportion to the population in each of the nine Provinces as determined by the latest census, and allotted to each Province accordingly.

The Commission further suggests that there should be paid to each Province from said Fund (if and when the amount to its credit in said Fund is sufficient therefor) an amount not exceeding 75% of the amount which such Province had paid, during the immediately preceding fiscal year, for the promotion and support of Drawing, Manual Training, Nature Study, Experimental Science and Pre-Vocational work, including Domestic or Household Science, but not including the provision of buildings.

It would appear to the Commission that a certificate by the Chief Education Officer of any Province, setting forth in detail the places, the work done and the sums paid by the Province in furtherance of these branches should be regarded as satisfactory evidence of the amount earned by said Province.

Any portion of the Fund allotted to a Province which may remain unpaid or unearned at the expiration of any fiscal year should be carried forward and remain in the Fund for said Province until earned.

SECTION 3: PRE-VOCATIONAL INDUSTRIAL EDUCATION IN ELEMENTARY SCHOOLS.

At many of the places visited the local committee or other representative body, to whom the Commission was indebted for opportunities to learn what was being done in Industrial Training and Technical Education, first guided the Commission to an Elementary School to show the character of the Hand Work which was provided for. That was the case more generally in Europe than in Canada. Out of that experience grew the conviction that a Report on Industrial Training and Technical Education would not represent fairly what was being done unless it included at least a brief statement concerning the Pre-Vocational or Trade-Preparatory parts of Elementary Education. Consequently some information is presented on recent developments of these parts of Elementary Education in England, Scotland, the United States, Germany and France.

(1) CONSULTATIVE COMMITTEE OF THE BOARD OF EDUCATION (ENGLAND AND WALES.)

The Consultative Committee was created by the Education Act of 1899, which empowered the Crown to appoint a Committee, two thirds of whom represent universities and other bodies interested in education, for the purpose of framing regulations for the registration of teachers and of advising the Board of Education on matters referred to it. It consists of 21 members, appointed by the Crown on the nomination of the President of the Board of Education, holding office for 6 years, one third retiring every second year.

The following are extracts from the *Report of the Consultative Committee on Attendance, Compulsory or Otherwise, at Continuation Schools* (1909).

"The Committee feel that some reference to the education and training given in the Day School is an inevitable preliminary to the consideration of the problem of Continuation Schools. The Day School and the Continuation School are integral parts of a whole, and it is useless to discuss the possibilities of the one without considering those of the other. The Continuation School works upon the material prepared in the Day School. Its curriculum, its methods of teaching, must be a natural development of the Day School.

"Even what they have learnt is often of an academic rather than a practical nature, and if, as often happens, they go at once into unskilled work, and have no opportunity of applying and fixing the knowledge they have acquired, they soon forget even what little they ever learned.

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"Exposition, now often given in excess, would be replaced in part by constructive work, and the consequent development of each child's individual powers would lead to an increasing desire for a lengthened school life.

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"But if it is believed that within certain age limits the brain development of children is better secured if their hands are brought into play than if they are wholly confined to book instruction, and this view is strongly held by the Committee, then an examination of what is being done in the Elementary Schools shows how far we are from reaching any such ideal. Training in handwork is no doubt common in the case of infants in kindergarten classes. But when infants are promoted to the lower classes of the upper school, this form of training is frequently dropped and not resumed until the children become eligible at the age of 11 or 12 to earn grants for instruction in the Special Subjects enumerated in the Code, and then only in a small percentage of cases, chiefly in the larger towns. The Committee understand that the movement in favour of increasing opportunities for handwork in the Day School for children between 7 and 11 or 12 years of age is growing, and that in some Public Elementary Schools much is already done.

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"The Committee feel that these figures point to a very serious defect in the Day School. They think that manual instruction should, in some form, enter into the curriculum of all schools for older scholars, as is the case already in London and some other large towns, and that this important branch of their training should not be dropped, as it so often now is, when children leave the Infant School.

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"There are, of course, other ways in which the curriculum of Public Elementary Schools could be improved, so as to give the scholars not only a better education during their Day School period, but one which would fit them better for further education. But the one outstanding fact is the need for more handwork in the curriculum."

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(2) LONDON COUNTY COUNCIL.

The following extracts from the Report of the Education Committee of the London County Council, approved March 1910, indicate the trend of opinion and action.

There is at the present moment a wide-spread feeling that it is of great importance, in the interests of the community at large, to give more attention to the development of "practical" education in the elementary schools. Both educationists and men of affairs seem to concur in the view that education can be made more effective if the pupils can be taught more by "doing" and less by listening. It is considered that the intelligence of both boys and girls can be stimulated and trained not only by the imparting and acquisition of knowledge by means of books, but also by the exercise of hand and eye upon concrete objects. It is felt that a boy on leaving the elementary school should have had an all-round training of his faculties, and should have acquired that readiness and adaptability which will enable him to turn his hand to the task that awaits him in the workshop or factory. Working-class parents are themselves fully alive to the importance of obtaining this kind of training for their children, as is shown by the recent formation of the National Industrial Education League, which has for its object the promotion of a system of education for boys in the elementary schools which will enable them to hold their own in the industrial world.

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The formation of the various Trade Consultative Committees, which are now assisting the Council in its work of technical education, also shows the importance which the workers in the various trades attach to education. Another sign of the present trend of thought is given by the fact that a deputation from the metropolitan borough councils recently waited upon our General Purposes Sub-Committee and called attention to the importance of making education in elementary schools more practical.

We are of the opinion that this movement of public opinion gives an indication of the method which the Council should adopt in the organization of the proposed schools. They should, in our opinion, be schools which will give their pupils a definite bias towards some kind of industrial or commercial work while ensuring that their intelligence should be fully developed and they should occupy a distinct position from the secondary school. They should avowedly frame their curricula with a view to the pupils leaving at an age between 15 and 16. Their courses should be so framed as to provide for the pupil the best possible equipment for entering upon the industrial or commercial world as soon as he leaves school while at the same time qualifying him to enter upon a special course of training for some particular industry at a polytechnic or similar institution if he desires to continue his education further.

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(3) CENTRAL SCHOOLS OF LONDON.

In addition to the Elementary Schools which supply the usual type of general education the London County Council has organized a number of Central Schools with a view to providing for those boys and girls who are to stay at school till about fifteen years of age an education which, while being general, will have a commercial, industrial or domestic subjects bias. It is proposed that there should be about sixty such schools and that they should as far as practicable be distributed uniformly throughout London. The pupils are selected from the ordinary schools when between the ages of 11 and 12 and they are chosen partly on the results of a competition for scholarships and partly on the results of interviews with the Head-teachers and Managers.

Much Constructive Work.

Only those pupils are accepted whose parents desire them to receive from that age some definite instruction and training to qualify them for the occupation which they are likely to follow when they leave school at 13 to 15 years of age. These schools make no attempt to teach trades as such. The pupils are given opportunity to acquire a knowledge of materials, tools and manipulations which will make them more useful and more able to learn quickly when they go to work in shops and factories or homes. The theoretical instruction and the practice in Arithmetic and Drawing are given a direct relation to the practical work of the pupil. Although there are differences in individual schools, in general about one half to two thirds of the time of the pupils is devoted to work on subjects usually taught in Elementary Schools, and about one half to one third of the time to manipulative or constructive work.

Scholarships.

A limited number of bursaries or scholarships tenable from the age of 14 to about 15½ are awarded to those pupils who need financial assistance to enable them to stay at school beyond the age of 14.

These schools are distinguished from the ordinary Elementary Schools by the fact that the pupils are selected and are expected to go through a complete four years' course with a special curriculum. They are also distinguished from the Secondary Schools by the fact that they are public Elementary Schools providing free education and that the curriculum is framed with a view to enable pupils leaving school at the age of 15½ to be in a better position to earn their living. The total number of Central Schools that had been organized up to 1911 was 39. Of these 13 have an industrial bias, 13 a commercial bias and 13 both an industrial and commercial bias.

The Commission understood that when the Central School scheme comes into full operation it is the intention to have the schools reserved for only pupils over 11 years of age.

The Commission visited a number of typical Central Schools. The following are notes of some of the suggestive or instructive features:—

West Square Central School.

This is a school for boys and girls with an industrial bias. About half of the whole time was given to practical or manipulative work including Drawing. Out of ten sessions per week one and a half sessions were devoted to work at benches in the workshop. The bench work was with wood only. The Principal of the school would prefer wood-working during two years and then wood and iron-working concurrently during two years.

The courses of study are grouped under several divisions, namely, Industrial History, Economic Geography, English, Mathematics, Handicrafts, Drawing. These are all closely correlated. For example, in the Wood-working department the boys make the apparatus required in the Science Laboratory. The school is situated in a working district and is specialized towards industrial life. Other Central Schools at the differentiation period give both commercial and industrial instruction. This school leaves out the commercial. The Commission received a volume containing a statement of the schemes of work in detail and illustrated by the pupils. It is a matter of some regret that space cannot be found for a representation of this document. Several hundred drawings illustrate the general syllabus for Science, Handicrafts and Drawing.

INDUSTRIAL HISTORY.

In the division of Industrial History the following brief statements are given as illustrations of the syllabus:—

First Year's Course: General Scheme.—Outlines of general history 1066–1485 with special reference to the Doomsday Book and the Feudal system; origin and growth of towns and guilds; economic effects of the Feudal system; agriculture, the principal industries, manufactures and trades, England's monopoly of wool, the effect of the Crusades on foreign trade; the Black Death and its economic results; the Peasants' revolt of 1381, and the subsequent condition of the people at the close of the Middle Ages.

Then follow details of the syllabus and the mention of reference books.

Second Year's Course: General Scheme.—Outlines of general history 1485–1689 with special reference to trade and industries, and the conditions under which the people lived; the conditions prevailing at the close of the Middle Ages and the great changes arising from the Wars of the Roses; the rapid growth of foreign trade owing to colonization; the increase of the mercantile classes; the revival of learning.

Then follow detailed particulars with mention of reference books.

Third Year's Course: General Scheme.—Outlines of general history 1689–1820, with reference to the "Bloodless Revolution" and its effects on industry and trade; the rising power of the trading classes; the acquisition of colonies and dependencies and the expansion of foreign and colonial trade; the transition from the domestic system of industry to the establishment of factories; the age of inventions.

Then follow detailed particulars with mention of reference books.

Fourth Year's Course: General Scheme.—Outlines of general history 1820 to the present time, with special reference to the industrial progress of the nation; the improved means of transit internally and with colonial and foreign ports; introduction of penny postage and the electric telegraph; the growing power of the industrial classes and organization; the general reform of social conditions; local government and extension of self government to the colonies.

Then follow details of the syllabus with mention of books for reference.

DRAWING.

In the Division of Drawing, Free Drawing and Mechanical Drawing are carried on concurrently during the whole of the four years. Free Drawing from Nature in the form of stems, leaves, flowers and shells goes practically hand in hand with Mechanical Drawing. In the fourth year the Free Drawing takes up the application of the forms of stems, leaves, flowers and shells to simple design, while the Mechanical Drawing goes as far as simple Mechanical Drawing as applied to machine construction with Isometric Drawing as applied to technical work.

A serious effort is made to shape the instruction so as to qualify the boys for the industrial life of the district. No attempt is made to teach the boys directly any trade, but to give them a degree of familiarity with tools in general besides the scientific elementary principles applicable to all trades.

Similarly girls are trained so as to be fitted for home-life. The girls' courses cover cooking, laundry, housewifery or house-keeping, dressmaking, needlework or embroidery; and preparation was being made for the introduction of millinery.

Interest and Enthusiasm.

A detailed course of study was also obtained from the Childerley Street Central School. It is somewhat different from that of West Square Central and was framed to meet the conditions of working and living in its area.

At the Childerley Street School the children between the ages of 11 and 12 are drawn from 17 other schools. The Commission was impressed by the evident interest of the boys and girls in their work. As a case in point, upon entering a drawing room where 25 boys were at work, instead of the presence of the Commission creating distraction there was only a casual glance of observation and then every boy went on intently with his work.

Other Central Schools were visited. A volume would be required to contain particulars regarding all the good work carried on at them. The Commission was impressed by the enthusiasm, native ability, alertness and educational experience of the Headmasters and the Headmistresses.

Physical Drill and Music were in evidence, boys singing what appeared to be difficult music in excellent harmony. Boys between 9 and 10 drilled with a precision of movement that was quite remarkable. In the Physical Drill of the girls more attention was directed towards grace of movement as illustrated in simple dances.

From one of the Central Schools it is reported that 70% of the boys enter industrial work. The Headmasters are in touch with employers and do their best to place every boy in a situation on the completion of his course.

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(4) TRADE PREPARATORY SCHOOLS IN LEEDS.

The Trade Preparatory Schools of Leeds belong to this class, They do not attempt to teach a trade as such, but to give information and training which prepare the boy to make progress without loss of time after he goes to work. These Pre-Vocational or Preparatory Trade Schools are also said to satisfy the boys and girls that through them they are acquiring experiences, developing abilities and gaining knowledge which will be directly beneficial to them. When this attitude of mind is common throughout the classes of the school, teachers say, pupils make much more progress. That is what might be expected.

Good All-Round Training.

The Holbeck Preparatory Trade School is a good example. It was opened in February, 1906, and was in full working order when visited by the Commission. The course of instruction given in the Trade Preparatory School is calculated to answer two very useful purposes. In the first place the hand, eye and brain are trained on sound commonsense lines, with a view to the ultimate employment of the boy in some branch of engineering. Secondly, the boy has many opportunities of observing and taking part in different kinds of work and processes. His interest is aroused and stimulated, He competes with his class fellows and often develops ability in quite unexpected directions. By this means the boy is encouraged to select some particular branch, and to some extent to specialize thereon, with a view to following it up in the works. When the time

comes for him to be drafted into the particular shop or office selected, he goes with a clear understanding of what is before him and with a mind fully prepared to master all the intricacies of his craft in record time.

The leading local employers are in full sympathy with the aims of the school, and the opinion in Leeds is that the time is not far distant when a full Preparatory Trade Course will be an essential qualification for entry into the better class of engineering works, which correspond with what are known in Canada as the Metal Machine Trades

The course of instruction provided covers a period of two years, and is laid down with the object of improving the general education, developing common sense and reasoning power, and enabling a boy to acquire the neccessary manual dexterity to ensure that he shall be put at once on useful work when he enters the shops.

Boys are admitted who have attained the sixth standard. That is two years before the completion of the Elementary School. The age is usually from twelve to thirteen.

Features which Impressed the Commission.

The following is a brief statement of the features which impressed the Commission on the occasion of their visit:—The school takes in lads intending to go into industrial work and an undertaking is required from the parents to the effect that the lad will not be withdrawn in less than one year. While the school authorities prefer that each pupil should stay at least a year and a half they let the boys go whenever a suitable place is obtainable. The main object is the improvement of the capacity of the youth before he enters on a trade. It aims at developing industrial capacity in lads of from twelve to thirteen. The courses of study are set out in full in the announcement; they are practically arranged in three divisions as to time, one third to English subjects, one third to mathematical subjects, and one third to shop work in metal and wood. The teachers engaged are men who are skilled workmen. They take a personal interest in preparing the boy for his future work and also in securing a place for him. Both the teachers and the boys themselves are on the lookout for suitable places. The equipment of the school was suited for handwork, foot power being used on the lathes. It was held that the boys learned more and learned better in that way. The attitude of the pupils revealed earnestness and keen interest in their work. The excellent quality of the work was specially noticeable in the wood and metal products and in the drawings.

Mr. Graham's Opinion.

Mr. James Graham, Chief Education Officer for the city of Leeds, told the Commission that he desired very much to see work such as that done at the Holbeck Trade Preparatory School put into every Elementary School for boys throughout Leeds, so that between the ages of 12 and 14 they may obtain a knowledge of the principles underlying all the main trades of Leeds. Their

English will be better than at present, their ability to draw will be better, they will read a plan easily and be able to make measurements and work out in practical arithmetic, based on measurements, statements of machinery details, etc. In short he anticipated that they will rapidly become skilled workmen, either at the bench or lathe. If they are going to be that, the sooner they are into the works after 14 years of age the better the boys will be as mechanics.

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(5) SUPPLEMENTARY COURSES IN SCOTLAND.

There is a considerable development of this type of educational work in Scotland. There it is known by the name of "Supplementary Courses of Instruction".

These may be considered as the most advanced work of the Primary School. They are designed for pupils who are to leave school at the age of 14. The instruction is to a certain extent specialized, and the Department indicates the nature of the specialization in specimen Supplementary Courses. These are:—I. Commercial Course; II. Industrial Course; III. Course for Rural Schools; IV. Household Management (Girls) Course. Navigation is suggested for seaboard schools. It is expressly stated by the Department that these courses are mainly suggestive and cannot, as a rule, be satisfactorily overtaken in their whole extent by pupils who leave at the age of 14. However, they are carried on in such a way that the pupil can continue them in the more advanced Continuation Classes.

Circular 358 of the Scotch Education Department states:—

School work has for its end and aim objects more important than preparation in the narrow sense for any particular occupation. It should aim at producing the useful citizen, imbued with a sense of responsibility and of obligation towards the society in which he lives. It should render him—so far as the school can do so—fit in body and alert in mind, and should prepare him for the rational enjoyment of his leisure time, as well as fit him for earning his living. These are ideals, no doubt; but they are ideals towards which the school should constantly strive.

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With regard to the special instruction to be given in the several Supplementary Courses, my Lords do not expect, nor do they at all desire, that such instruction should attempt to take the place of that kind of knowledge which can only come from the daily practice of some particular occupation. But this instruction, rightly given, should make that practice more intelligent, and should remove certain difficulties from the way of the learner. It should be sufficiently general in scope to make it profitable even for those who for one reason or another will not follow in after life the particular group of occupations which has been kept mainly in view.

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It is obvious that great differences will exist, particularly between town and country schools, as regards facilities for the formation of courses such as those now suggested. In considering the problem of these courses, my Lords have had constantly in mind the position of the small rural school taught by one teacher. In such circumstances class teaching of the small number of pupils who have reached the Merit Certificate stage is clearly out of the question. But my Lords are scarcely disposed to regard this as being, in certain respects, any real disadvantage. It has been frequently noted as one of the defects of the large town school, with its minute subdivision of classes, that the pupil is left little leisure to think for himself, and

that the habit of depending upon the instructions and explanations of the ever-present teacher is apt to become ingrained. On the other hand, it is the opinion of not a few experienced observers that the country lad, as compared with his contemporary in a town school, shows towards the close of his school career greater intellectual resources, and that this is due, not so much to inherent mental ability or to any superiority in the teaching, as to the fact that—the aid of the teacher not being always available—he has been forced by circumstances to think for himself. Be this as it may, it is clearly desirable, in the case of a pupil who is to be more or less his own master at fourteen years of age, that there should be in school a period of preparation for this state of semi-independence, during which transition period he shall be regarded not as a pupil of a class, but as a student studying, under direction, certain subjects for ends which he himself in some degree realises and desires.

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Not merely should self-reliance in study be fostered, but a sense of responsibility should be inculcated, by giving him at this stage some authority as regards conduct in the playground, and the minor matters of discipline, as well as a position of honour in exercises common to the school, such as drill. The boy at this stage tends to acquire a sort of authority among his schoolmates, and it is most important that this natural influence should be enlisted on the side of law and order, rather than that it should be driven, as it easily may be, into opposition. There seems to be no reason why it should not be turned to account in primary schools, as it frequently is in secondary schools, as an instrument in the development of character, and in the fostering of a healthy *esprit d'ecole.*

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But whether in town or country, whatever the opportunities for collective instruction may be, the distinguishing note of the work of the pupils in the Supplementary Courses should be individual study directed to practical ends. So far as the acquisition of knowledge is concerned the object should be, not so much to impart information to the pupil as to exercise him in obtaining for himself from sources within his reach, and setting out in an orderly manner, all necessary facts relative to a given topic. Great use may be made of the daily newspaper as a starting point of such investigations. For instance, having made an analysis of the shipping returns for a given port the pupil may ascertain the general character of its trade; look up in an atlas the various places mentioned in the shipping list; make note of their relative position and distance; gather from school geography, gazetteer, or encyclopædia certain information as to the more important of them, and finally set forth the information obtained in a well digested and orderly form.

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All this is not matter for formal and regularly recurring lessons in geography or history, but for individual investigation extending over, it may be, several days. The newspaper will also be useful in other ways. Its various articles will afford material for exercise in *precis* writing; difficulties of vocabulary will give occasion for frequent and useful reference to the dictionary; above all, perhaps, the market reports will furnish a body of material for exercises in calculation much superior to the cut-and-dried examples designed to illustrate the rules of a textbook, while their perusal may be made the occasion of acquiring much incidental information of practical value. It is by means such as these that a sense of actuality may be given to the work and a spirit of initiative cultivated in the pupils. But the examples given are not intended as directions to be implicitly followed; it is much more important that individual teachers should exercise their ingenuity in devising for themselves the best means they can for achieving the essential objects aimed at.

Twelvefold Increase in Ten Years.

An indicative of the growth of Supplementary Courses the following information is taken from the report of the Committee of Council on Education in Scotland, 1910–1911:—

A notable educational development of recent years has been the attempt to add reality to the work of the Primary School in its later stages by setting aside some time for the consideration of what has been already learned, in its practical bearing on the probable future occupation of the pupil and the employment of his leisure time. That is the special function of the "Supplementary

Courses" to which it is desirable that one or, if possible, two years should be given before the close of the period of general education. During the year ended 31st August 1910, 60,683 candidates were approved by the Inspectors, under Article 29 of the Code, for enrolment in Supplementary Courses or Higher Grade Departments.

During the same period the average attendance on which grant was claimed in 1,945 Primary Schools was 43,287, representing the scholars who have received instruction in Supplementary Course Work, and on whose account grants have been allowed at the advanced rates under Article 21 of the Code. Some idea of the progress in advanced work in Primary Schools during recent years may be gathered from the fact that in 1900 the number of these schools was only 162, with an average attendance of 3,282 in Supplementary Courses, paid under Article 21. But there is room for increased effort in this direction, and the need for Managers to make suitable provision for practical instruction in terms of Schedule VI. of the Code cannot be emphasized too strongly.

The foregoing shows an increase of over twelvefold in ten years; and yet the authorities, it will be noted, emphasize the need for increased effort.

Examples in Edinburgh.

The Commission visited schools in Edinburgh and saw classes in the Supplementary Courses at work in rooms fitted up in the ordinary public schools. In the Gorgie school, out of a total enrolment of 750 pupils, 80 boys and 80 girls were in the Supplementary Classes. In the Dalry School there was a similar proportion of pupils in the Supplementary Classes. Edinburgh has gone ahead with the plan of providing three special schools in which these Supplementary Classes can be conducted for children of twelve years of age whose parents desire their education to be somewhat specialized according to the trade or profession which they wish their children to follow. They will have a larger equipment for practical work than is at present provided.

Before they can get admission to the Supplementary School the scholars have to pass a qualifying examination of the Scotch Education Department so as to ensure that they are capable of taking advantage of the instruction imparted in it. The children are grouped into two divisions, those going on to the trades in one group and those desirous of a commercial career in the other. The curriculum is adapted to suit their needs. For those about to learn trades the workshops in connection with the school will be utilized. These workshops at the one school already erected, known as Tynecastle Workshops, provide for instruction in the following branches: Elementary Engineering, Brass Finishing, Tin-smithing, Moulders' work, Pattern Making, Elementary Building Construction, Plumbing, Carpentry and Joinery, Cabinet and Furniture Designing, Upholstering, French Polishing, Plasterers' work, Tailors' work, Tailoresses' work. There are also classrooms for Cookery and Laundry work.

Certificate of Merit.

To pupils who have satisfactorily completed the course of the Primary School, including attendance for at least one year at an approved Supplementary Course, the certificate called the Certificate of Merit is granted.

While there is no doubt that in many of the Supplementary Courses good work is being done, those in close touch claim that there is still need of improvement, especially in the direction of preparation for the future work of the pupil in the Continuation Classes. At present too many come to the Evening Classes with little of the special training that the Supplementary Courses are designed to provide.

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(6) EXAMPLES FROM THE UNITED STATES.

Fitchburg, Mass.

In the United States during the last few years beginnings have been made at many places in providing what are called Independent Industrial Schools and Schools of Manual Arts. An example of the latter kind of school is the Observation and Practice School at the Normal School at Fitchburg, Mass. At this school the pupils who take the Practical Arts Course begin at about 11 or 12 years of age to do manipulative and constructive work, the products of which have economic values. The children devote about 20 hours per week to the usual school subjects and 10 hours per week to the industrial activities.

The School is called the Manual Arts School of Fitchburg, Mass. Pupils from any part of Fitchburg who have completed the 6th grade are admitted at about 11 or 12 years of age. Four courses are offered, the successful completion of any one of which admits the pupil to the High School, where he may continue the line of work upon which he has begun or may take a fresh start by electing a different course.

A Commercial Course—30 hours per week—for those who expect to take the Commercial Course in the High School or Business College, or who intend to go to work in offices or stores at the end of the grammar grades.

12½ hours to Literature, Composition, Spelling, Penmanship, Mathematics, Geography, History, and Science.

7½ hours to Physical Training, Music, General Exercises, and Recesses.

5 hours to Bookkeeping, Business Forms and Procedure, Business Arithmetic, and Related Design.

5 hours to Typewriting and Hand work,.

A Literary Course—30 hours per week—for those who expect to go on through the High School and College.

12½ hours to Literature, Composition, Spelling, Penmanship, Mathematics, Geography, History, and Science.

7½ hours to Physical Training, Music, General Exercises, and Recesses.

5 hours to a Modern Language.

5 hours to Drawing, Designing, Making and Repairing. (Household Arts for Girls.)

A Manual Arts Course—30 hours per week—for those who expect to take the Industrial Course in the High School, or who intend to go to work in the trades, the mills or factories at the end of the grammar grades.

12½ hours to Literature, Composition, Spelling, Penmanship, Mathematics, Geography, History and Science.

7½ hours to Physical Training, Music, General Exercises, and Recesses.

10 hours to Drawing, Designing, Making and Repairing.

A Household Arts Course—30 hours per week—for girls who wish to devote a large amount of time to the arts of home making.

12½ hours to Literature, Composition, Spelling, Penmanship, Mathematics, Geography, History and Science.

7½ hours to Physical Training, Music, General Exercises and Recesses.

10 hours to Household Arts.

An unusual amount of time, it will be noticed, is given to handwork, which takes the form chiefly of Typewriting in the Commercial Course, and which in the other courses is devoted to a great variety of useful labour. No work is undertaken except in response to a real need. The finished work must meet the need adequately, and must be performed with despatch and in a workmanlike manner. Pupils are therefore directed not only by teachers, but also by skilled journeymen who work with them. Beauty of design, colour and ornament are not neglected.

Newton, Mass.

Other schools of this sort, at which pupils do industrial work which has economic as well as educational value, have been established during recent years in Massachusetts and other States. Some of them take only pupils above the Elementary School age, although they are not required to have completed more than the sixth grade of the Elementary Course. Such schools as receive only pupils over 13 years of age, but who may not have completed the regular work of the Elementary School, lie on the border between Elementary Education and further education for industrial purposes. Such schools are more fully discussed in the Report on the United States under Independent Industrial Schools.

The Grammar School.

The visit of the Commission to Newton was to see the Independent Industrial School and the Technical High School. Those to whom the Commission was indebted for the opportunities of the occasion conducted the Commission first to one of the Grammar Schools. In the Grammar School (the U.S. term for Public Elementary School) a printing office was found as part of the school equipment, and printing work was done by a number of the boys as part of the Elementary School course.

The first aim was to develop the boys' English. The printing is done for the school and for the Principals of other schools. For example, arithmetic papers are printed instead of being put on the blackboard. Everything turned out is intended for use, and not merely as an exercise for the boys. After a little practice in printing the boys make fewer mistakes in spelling.

Some boys who had not done well in ordinary school subjects did so well in this department that they gained confidence in themselves and afterwards did better in all school work. The boys have a choice between Manual Training in woodwork and printing. The Principal of the school was of the opinion that if the choice lay between the two he would put printing in the school in preference to woodwork. While the printing does not bring the larger muscles into full action, he thinks the training in manipulation is as fine as in Manual Training in wood.

The boys who have had the printing in the public school obtain places more readily and obtain higher wages when they leave.

The Independent Industrial School.

In the fall of 1908 it was found that in the City of Newton, Mass. there were a number of boys who had reached the age of fourteen who were not profiting from the Grammar School work and likely soon to leave school but who could profit from a school in which hand work should predominate, with academic work and Drawing correlated closely with the shop work. A number of other boys were found who were doing excellent work in the grades, whose family circumstances rendered it impossible for them to complete a High School course, but who would make superior mechanics if given an opportunity to learn a trade or lay the foundation for a trade.

It therefore seemed advisable to establish in Newton a school which should be the intermediate step between the Grammar Grades and the occupation in which such pupils should find their life work; a school which should be industrial in character, aiming to lay the foundation for an industrial career; also varied enough in the industrial branches taken up to give each pupil a chance to prove his ability for some definite trade.

Accordingly the Newton Independent Industrial School was authorized by the Board of Aldermen of the City of Newton, Jan. 12, 1909, with the approval and subject to the supervision of the Massachusetts Industrial Commission (now consolidated with the State Board of Education).

RELATION TO THE PUBLIC SCHOOLS.

The school is governed by a Local Board of Trustees consisting of seven members. It is conducted independently of the regular public school system, although articulating with it.

Pupils are admitted who are over fourteen years of age and fitted to profit from the work given.

While the Industrial School is primarily intended for boys who could not or would not profit from the High Schools, yet admission to it does not prevent pupils from entering the High School later if their academic and economic circumstances warrant it.

TEACHERS

The policy regarding the instructors in this school is that only such men shall be engaged as teachers as have had actual shop experience sufficient to become recognized as journeymen mechanics, and have satisfactory qualifications in personality, character, academic training and teaching ability.

The aim during the first part of the course is to have the boys brought into contact with several lines of mechanical work in order to find out what trade each is best fitted to follow. In this respect it agrees with the Central Schools of London and Manchester and the Trade Preparatory Schools of Leeds and Ireland. During the last year or year and a half, each pupil specializes along the line of his greatest ability. The curriculum includes Woodworking, Machine work, Electricity, Sheet Metal Work, Printing, Mathematics, Mechanical Drawing, English, Commercial Geography, Science and History.

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(7) INDUSTRIAL TRAINING IN ELEMENTARY SCHOOLS IN BOSTON, MASS.

When the "*Macdonald Manual Training Fund*" was provided to extend Manual Training in Canada, much helpful information was obtained from the schools of Boston, Mass., and particularly from Mr. Frank M. Leavitt, Supervisor of Manual Training in the Public Schools of that city. In a paper presented by Mr. Leavitt at a Conference on the Training of Children for the Trades and Practical Life, held in New Haven, Conn., April 27, 1910, the plan followed in Boston is traced. The following extracts present some of the salient points in greater detail than they were recorded in the notes of the Commission on the occasion of its visit:—

Boston has established various schools and classes in which industrial training is given to pupils in the elementary grades.

Our present educational scheme fails to recognize that the bulk of industrial workers must remain permanently industrial workers. The whole tendency of industrial development during the past two hundred years has been to concentrate in the hands of fewer and fewer men the management and direction of industry, until, while the theoretical possibility of rising out of the ranks to be a captain or a general of industry still exists for each individual, the probability is about as remote as that the promising boys in some senior class may live to be presidents of the United States, and for the masses such advance is absolutely impossible.

RELATIVE COSTS OF ELEMENTARY AND HIGH SCHOOL EDUCATION.

Our scheme of education is planned for the few rather than the many. It is a selective process, and the methods and machinery are adapted to those who go to the top.

Of course, no one would suggest that we should restrict the opportunity of any pupil, but we should remember that equal opportunity for all does not mean identical opportunity; and we should provide a differentiation for those who definitely plan to take only a fragment of the course, such a fragment as can be covered before reaching the age of fourteen, whether it be much or little.

Let me explain by a concrete example something of what is involved in this plan for an earlier differentiation. Let us take the cases of two Boston boys, eleven years of age, just about to enter the sixth grade, the sixth year in school. The parent of one boy says: "I am planning to send my boy to college." The parent of the other says: "I am planning to keep my boy in school until he is fourteen years of age, and then put him to work." What will the public school system do for these boys? It will admit the first boy to the Latin School, and will give him a six years' preparatory course at an annual cost to the city of $102.00, or a total cost of $612.00. It will permit the second boy to remain in the elementary school for his three remaining years at an annual cost to the city of $28.00, or a total of $84.00; $612.00 against $84.00. The first will have the advantage of small classes, highly paid and exceptional teachers, and a curriculum exactly suited to his requirements. The second will have the disadvantage of large classes, relatively cheaply paid and possibly inexperienced teachers, and a curriculum somewhat vague and decidedly general in its purpose, and interrupted at any point where he happens to be when he arrives at his fourteenth birthday.

I think you will readily agree that we owe something different and something more to this second boy. He is said to be typical of a large number of our boys, variously estimated at from 60 to 75 per cent of all those entering the schools of the United States. As I have said, our educational scheme has failed to recognize the needs of these—the majority of our boys. It is a vital defect.

MANUAL TRAINING AND INDUSTRIAL TRAINING.

Manual Training was introduced in response to a demand for industrial training, which began to take shape shortly after the Philadelphia Exposition in 1876. As early as 1878, thirty-two years ago, the Boston School Committee had reached the following conclusion: "The question of teaching trades in our schools is one of vital importance. If New England would maintain her place as the great industrial centre of the country, she must become to the United States what France is to the rest of Europe—the first in taste, the first in design, the first in skilled workmanship. She must accustom her children from early youth to the use of tools, and give a thorough training in the mechanic arts."

In 1906, the Industrial Commission of Massachusetts made an exhaustive report on Industrial Education, a report which has done more to shape thought and action than any other volume which has been written on this subject. The report devoted less than a half page to the subject of Manual Training, and the conclusion reached was as follows:

"It (manual training) has been urged as a cultural subject, mainly useful as a stimulus to other forms of intellectual effort—a sort of mustard relish, an appetizer—to be conducted without reference to any industrial end. It has been severed from real life as completely as have the other school activities. Thus it has come about that the over-mastering influences of school traditions have brought into subjection both the drawing and the manual work."

INDUSTRIAL TRAINING AND ELEMENTARY SCHOOLS

The present demand for industrial training is a revival of the earlier demand. Its keynote is "reality". It means the fitting of a real boy for a real job. There are some of us who believe that it calls for as close a duplication of real shop conditions as is possible and desirable, the turning out of a real product that will be readily used. It means the training of the rank and file of the industrial army.

Boston has undertaken the work, and it is now my purpose to describe briefly one of the earliest experiments in industrial training in the elementary schools. There was organized in September, 1907, what has been known as the Agassiz School Industrial Class. The primary purpose in establishing the class was to provide an experiment, the results of which would assist in answering one or all of the following questions:

(1) Is it possible so to modify the elementary school curriculum that it will become more effective in training pupils for industrial pursuits, while maintaining the same efficiency in preparation for high school?

(2) Will a considerable number of boys and their parents be interested in such a course of study, should it be established?

(3) If taken by boys otherwise likely to leave school at fourteen years, will this course have the effect of inducing them to stay longer in school?

(4) Will the pupils be as interested in manufacturing a product which is to be used by the city, as in making for themselves the ordinary manual training models?

The experience of the three years would seem to indicate that all these questions should be answered in the affirmative. Each year, approximately 33 per cent. of the boys in the sixth grade of the Agassiz School have requested permission to enter the Industrial Class, and each year more than the average number of boys have been regularly promoted, so that at present there are 132 boys taking the industrial work. These boys are distributed as follows: Grade VI, 50; Grade VII, 44; Grade VIII, 38.

Fewer boys have left the school on arriving at the age of fourteen than would ordinarily be expected in this district, only two boys having thus far left the industrial class to go to work. The product has been a practical one, manufactured in quantity and used by the school department. It should be noted that the boys have done all of the regular work of the school, excepting the manual training which the industrial work supersedes.

Especially are the boys taught the value of material and of time, and the industrial value of the division of labor; and this is brought about by appealing to that incentive which has been the mainspring of industrial progress in all ages, the desire to produce an equally good article at less cost; that is to say, with less waste of material and less expenditure of labor.

It is believed that this experiment has been, on the whole, eminently successful and enlightening. It would seem to demonstrate the desirability of providing for those pupils electing it, an elementary introduction to industrial training as early as in the sixth or seventh grade. It would also seem to demonstrate the necessity of providing schools of secondary grade but with shorter courses than our present high schools, because it is felt that many of the boys on graduation from the elementary school will wish one or two years more of very definite and intensive instruction.

A similar class was organized in the Oliver Wendell Holmes School, the shop work, however, being cabinet-making.

In both of these schools the classes are ungraded and no pretence is made of fitting for high school. Ten hours a week are given to shop work.

Still another experiment is the Pre-apprentice School in Printing and Bookbinding. Boys in the printing class are fourteen years of age or over, and are supposed to remain in the school for two years and to take apprentice positions at the end of that time. While no written agreement exists, the School Committee and the Typographical Union have a tacit "understanding" regarding this class. Both boys and girls are admitted to the class in bookbinding, which is not yet organized on the pre-apprentice basis, but rather on a basis like the Agassiz class.

The least we should be satisfied with, is a flexible educational scheme which will provide:—

First: Manual training in all elementary grades at least two hours a week.

Second: Industrial classes open to pupils so electing, which will prepare for high school, while giving nevertheless five hours a week to some practical constructive work, awakening an interest in things industrial and giving a familiarity with tools.

Third: Ungraded industrial classes open to boys so electing, for whom high school for any reason is out of the question—classes which prepare for and lead to industrial schools of intermediate grade or, should the boy leave at fourteen, prepare for a more intelligent entry into the lower grades of industrial work.

Fourth: Diversified secondary schools.

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(8) NATIONAL EDUCATION ASSOCIATION.

The National Education Association was founded in 1870, and reorganized in 1906 under a special act of Congress granting it a charter. In 1880 the National Council of Education was formed, consisting of 120 members selected from the general association, to serve for 6 years, and this constitutes an inner council to consider topics on which general action is desirable. The corporation is managed by 5 trustees, and a board of 28 life directors and 50 elected directors, representing geographical divisions. Its work is carried on through 18 departments, composed of members specially interested in a particular phase of education (e. g. elementary, secondary, agricultural education, child study, manual training, etc.) Annual meetings are held in July, the Proceedings of which are published.

The following are extracts from the Report of the Committee of the National Education Association on the "Place of Industries in Public Education" (1910.)

"Those educational reformers who have striven to reorganize education, making it more interesting and more in accord with the nature of the child, have usually been pronounced advocates of constructive work. We may dis-

tinguish between two general uses for which it has been employed; (a) to give motive for school work otherwise meaningless and uninteresting, and (b) to render more positive and lasting the results of instruction.

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"It is at this age that the rate of elimination of pupils from school becomes portentous. The reasons that cause children to leave school are very numerous, but unquestionably a very large proportion, at least a majority, give up because they cannot feel that it will repay the sacrifice of effort or expense or both. Other reasons are for the most part contributory. This one is fundamental. There are two classes of children to whom school work does not seem worth while. One of these consists of pupils who can and do get on well in the school but find the activities on the outside more interesting and profitable. The other is composed of pupils who do not prosper in the school. Such children naturally grow discontented. No one can be expected to regard as worth while for him that which he is incapable of doing. Moreover in such a competitive atmosphere as a school merely to pass means practically to fail.

"For those who fail in the older studies of the school the constructive work may offer a field for success. For both classes it should constitute the main part of the later school program. As an integral part of the preparation for life, it deserves a place proportionate to the number of those who need such preparation and the amount of such preparation it is possible and desirable to give.

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"Since a large part of the population, three-fourths to nine-tenths, accordingly to locality, never succeeds in entering any other than the Elementary School, three obligations, distinct and somewhat conflicting in the demands which they make upon the curriculum, would seem to be placed upon this school:

1. To develop as much as possible of culture—enrichment of life through knowledge and appreciation of human achievement in history and art.
2. To give the best possible start towards the life-work in which the person will be most content and most efficient.
3. To furnish the best possible training for citizenship through developing a sense of social obligation and by preparing for effective membership in the various social groups.

To these might be added the aim of giving to a minority the best possible preparation for continuing their education in higher schools.

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Special Industrial Classes.

"However, even with the fullest development of the industrial element in the regular course, the educational needs of a large percentage of the pupils will not be met. This is especially true in the cases of those pupils who do not readily respond to our usual methods, and who, therefore, do not progress regularly from grade to grade.

These pupils leaving school at fourteen, especially when they leave from the lower grades, are unable to secure occupation which promises regular and satisfactory advancement. These workers, entering as they do into unskilled or into highly specialized industries where the subdivision of processes is minute, require for their own well-being and for the benefit of their employers a general rather than a specific industrial training.

For these reasons it is extremely desirable to introduce industrial classes in connection with the regular work of the last two or three years of the Elementary School that will appeal directly to the above groups of children and occupy four or five hours a week.

Admission to such a class might be limited to pupils fourteen years of age, or those on whom the school has no further legal hold. It would obviously interfere with entrance to High School, and should presumably be placed before the pupils as an inadequate substitute for a secondary course, none being admitted except upon evidence of inability to afford or profit by the conventional High School course and upon written consent of parents.

The work of such a class might deal with a small or larger number of industries according to local conditions and requirements. In either case, however, with such a time-allowance it could clearly be more thorough, systematic and technical than that of the regular Manual Training Courses. It might well be expected not only to give a semi-vocational preparation to a considerable number of the more mechanically minded boys, but also to lengthen materially the terms of their school life—in which case both the industrial and the academic work secured would be for the pupil just so much clear gain.

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"From the evidence which the Committee has obtained, it is clear that boys who enter mechanical trades, almost without exception, leave the public schools before graduating from the Grammar (Elementary) School. It should be recognized therefore that the beginnings of trade education, if such education is to articulate with our present school system, must be had in schools that will draw their pupils largely, if not entirely, from the class of boys who have not graduated from Elementary Schools. Such schools (Intermediate, Industrial or Preparatory Trade Schools) cannot therefore be really parallel with existing High Schools.

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"The courses of study for this type of school must always be sufficiently intensive on the vocational side to give them the necessary economic value, while at the same time the instruction should be suited to both the mental and the physical capacity of pupils from fourteen to sixteen years of age. There should be in the curriculum, therefore, nothing that is not of direct assistance for preparing pupils for work in the industries."

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(9) FROM "CONVERSATIONS" WITH LEADERS.

Information from "Conversation" with DR. T. M. BALLIET, *Dean of the School of Pedagogy, New York University.*

Dr. Balliet had very strong convictions that there ought to be differentiation in the kind of work which pupils under fourteen do in the Elementary Schools. There is very little differentiation below High School, that is, during the first eight years of school life. There is perhaps more in New York City than elsewhere. In some Elementary Schools they take young people of fourteen or approaching that age, who are to go into the stores as cash-boys, saleswomen, etc., and give them a special training in rapidity in legible flowing writing, rapid addition, and accuracy in figures to a degree that would be a waste of time for other children who are not to go into such employments. That plan could easily be pushed further.

A law on the Statute Books of New York State which has not yet been worked out in the schools provides for differentiation in Elementary Schools at the end of the sixth school year; that is usually at 12 years of age, one class of pupils then being given a good deal of Manual Training and the beginnings of industrial work. There is another differentiation for those who are to go to High School, and a third for those who are to go into commercial business. There is no provision yet for the teaching of Latin, even to those who are to go to College. It seemed to him that a differentiation was needed there for many reasons. All over Europe they separate, at a much younger age than we do, children who are to go to the University or higher institutions.

DIFFERENTIATION IN THE WAY SUBJECTS ARE TAUGHT.

The keeping together for eight long years of all children, the dull and the bright—and they vary very much—with such different aims in life—one intending to go to college, another to a profession and another to work at fourteen, necessarily involves waste. The course is usually arranged more or less for those who go to higher schools.

The school men in the United States are in the midst of the discussion, and many are in the dark as to what is to be done with Industrial Education before High School. There is a great deal of wild talk, so one would think the whole elementary curriculum was to be pointed to Industrial Education. The thought

of differentiation is not widespread yet, but the schools are running up against the difficulty. Different studies should be taught differently.

Take Arithmetic for example. If a child is to go to High School or College, and studies the theoretical part of arithmetic as the basis of algebra and the higher mathematics, it would not matter about his knowing the commercial side of arithmetic, beyond calculating interest and a few such direct topics, because if he goes into business he can pick that up very soon after his full college course. The boy that is to go to work would waste his time on the theoretical part of arithmetic. He wants to get the direct side of it, and ability to deal with problems that come up in the ordinary workman's life.

So with Geography. The child preparing for College should have the scientific part of Geography; Physical Geography and the causes and relations would be the main thing taught to him; while the child that is dull in Geography would require a geographical reader describing different countries in an interesting way, and would study maps and memorize the places, and deal with causes and relations as far as he could. But the treatment of Geography should be different for the two, and it should be a good deal briefer for the child that is to go to College.

So in History. American History can be cut down a great deal, and the child that is to go to College can begin European History, Mathematics and the so-called higher studies earlier than the other child.

Bright children in the United States lose time in the schools, for the teachers aim to get the bottom ones promoted, not to have too many stop over, and thus all instruction aims at the lower third of the class. This cannot be remedied by jumping the grades. Some of that has been done, for the teacher is willing to let those jump who are really far ahead of their class, but those who are just a little ahead, 'who could do harder work and more,' the teacher will not promote into a new grade, so they simply mark time. There are reasons for differentiation there. A good many children in the United States cannot tell until pretty well on in their studies whether they will go to College or even to High School.

The bright child and the dull child should not be taught by the same methods; that is true of nearly every study. The brilliant child can put in the "dropped stitches" in the instruction, but with a dull child you must go step by step, and if one step is omitted the child cannot grasp the next one. With brilliant children study is made distasteful by putting in all the steps, and it has very much the same effect as of explaining a joke, whereas the children want to "see the point" themselves. We all realise this in reading a book like Emerson's Essays, which is suggestive because there is so much between the lines that is not said; if it were said it would be a very dull book; we prefer to supply it ourselves. As teachers aim at the lower third of the class, the talk is more or less insipid to the bright scholars, and they lose time.

Manual Training Discovers Aptitudes.

Children who are to go to work at fourteen ought to take more Manual Training, more Cooking, more of the things that would enable them to become productive laborers, and enough of those beginnings of industrial work to enable them to "find themselves." One reason why the Elementary School curriculum should be broad and have a good deal of Manual Training and those other things is not only because that sort of training is good for all-round development, but because it enables the children to try themselves on various things. With the old curriculum which had only book work, a boy could learn whether he could or could not do book work; and if he could not, nothing in the school enabled him to discover what he should be. He simply got discouraged and left school. It is the duty of the school to make provision in the school by which all can actually discover what they can do.

A boy who is skilful with his hands and of a mechanical turn of mind ought to discover that in school, and not be thrown out into the world without aim to blunder and perhaps never find his place.

Manual Training is goodf or all children, and that is the thing to establish and push in Elementary Schools. Every child ought to have any work that develops it, and a good variety of it. The relation of Manual Training to industrial work is somewhat like that between the College course and the professional course in a law school. It lays a particular basis of motor training for the specialized sort of work that is learned in a trade. The thing to keep in mind in trade instruction is to make workmen versatile, so that they can turn from one thing to another. In learning their trade in a shop they learn only to run one or two machines, and when these become obsolete and the man is 40 or 45 years old he is apt to be stranded. Before they take up their trade children should get as much academic training as they can take, and a pretty broad hand training.

Difference Between Manual Training and Industrial Training.

The principal thing to the children is not that they are making things for the sake of learning, but rather for the sake of having something to give to somebody. That is the industrial motive; so there is no difference to the child between Manual Training and Industrial Education. The child ought to have the motive to do the thing for the sake of the thing made. On the other hand, the teacher's motive in Manual Training ought to be to give the child a broad motor training and an insight into the laws of mechanics.

In industrial work, of course, the teacher has an interest in the thing made as well as in the process of making it; and it is necessary to push that far enough to get speed. In Manual Training we do not emphasize speed; we let a child go as slowly as he wants to provided the work is of good quality. But in an Industrial School with pupils that are to go out and practice a trade, they must not only do things of good quality, but in a reasonable time.

A good instance of the latter is found in the Williamson Trade School near Philadelphia. The head of that school was a teacher of Mechanical Drawing. After holidays he would take the senior class alone in the Drawing room, everything being just as it would be ordinarily with nothing got ready; then he would take out his watch and tell them the time; then in the presence of the class he would get everything ready to execute a piece of work in Mechanical Drawing as rapidly as he could do it of good quality, and jot down the time. He would then say, "I will give you 40% more time than I took, and at the end of this year all those who can do that in 40% more time will graduate, and others will not." They worked for speed when they had ability for quality. That is a pretty good principle.

Motive in Education.

Speaking of motive in education Dr. Balliet said the children eat their breakfast because they like it, but the mother has another motive, she watches what they eat. It is that way in study. The really great problem that some men are working at now in the Elementary Schools is how to present each subject and each part of each subject in such a way that the child will want to learn that thing to help him to solve some puzzle in his own life that he is now interested in. The child feels no interest in learning something that will do him good 20 years from now when he is grown up.

From "Conversation" with Dr. Charles L. Richards, *Director of Cooper Union for the Advancement of Science and Art, New York.*

New York City has a scheme of Manual Training generally representing shop work in the last two years and other things in the years below; but that work has not been, at any rate until very lately, so much influenced by industrial practices and vocational requirements as by rather pedagogic formulae. Dr. Richards said that fourteen years ago he turned aside from technical work to take up the matter of training teachers for Manual Training because he believed that that was one of the great means for affecting the whole situation, and for ten years he was head of the department at Columbia University. He still believes in it as a tremendous thing at the bottom of any full and complete system of Vocational Education. We must have in the Elementary School experiences that deal with the industries and with vocations to the extent of developing intelligence in regard to them—an understanding of their qualities to the extent of leaving the boy and girl at the end a freer choice of vocation because of stimulation in those different directions.

Manual Training and Industrial Education.

Within the last two years he had noticed at Conventions and other meetings upon Industrial Education the frequent reference to Manual Training, whereas five years ago, when the interest in Industrial Education was growing so rapidly,

it was the custom to decry Manual Training as being a mere namby-pamby, a school teacher's product and something that had no vital quality about it or any special meaning in the field of Industrial Education. He had also noticed that manufacturers and employers in the last few years had come to see that at the bottom there should be a good system of Manual Training in public schools —though nobody has yet discovered what is meant by a good system. Beyond that there has been no reaction from above to any great extent, though he thought it would come in the near future.

Vocational Guidance.

As the matter of Vocational Guidance develops, the question of the pupils' careers must be viewed through what the community represents in vocations; data must be had of those vocations showing how the various industries lead forward in a progressive way to certain remunerative trades. If these could be reduced to terms of social and economic value to the school system, and used in advising boys and girls as to their after careers, there would be a more effective reaction of that environment on the school curriculum than has ever been the case.

Miss Julia Richmond, who is a District Superintendent of Public Schools, is trying a similar experiment on the lower East Side, taking boys and girls from the public schools at 12 and 13, sometimes 13 and 14 if they are backward, just previous to the working period, and giving them a preparatory training in vocational ways which will not make them competent trades people but will put them in the way of "finding" themselves and give them a little gumption about industrial work. This work is more intensive than Manual Training. It is for ten hours a week, with twenty hours academic work.

That is a rather radical thing, and with the Fitchburg work represents a very new element, but it will undoubtedly be a long time before the principle they represent becomes predominant in the U.S., for the American people regard the Elementary School as a sort of sacred institution dedicated to general education and not to be touched in any other way. In fact it is only of late years that they have been content to allow advocates of vocational education to take the period between 14 and 16; and that only because they see that the boy and girl are going to leave. This is one of the things that is working for the best good of the great mass of the boys and girls leaving school—the plan of reaching down a little below fourteen and trying to help them to get their working powers trained before they leave school.

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(10) PRE-VOCATIONAL WORK IN ELEMENTARY SCHOOLS IN GERMANY.

The Commission did not find special classes or courses in the Elementary Schools of Germany which correspond to the Pre-Vocational or Trade Preparatory Schools of England, Scotland or the United States. The Volksschule of Germany, with its 8-year course from 6 to 14 years of age, is provided definitely

for those who intend to leave school and enter upon employment at 14 years of age. The whole course of instruction from 10 to 14 years of age is based on that understanding. The pupils who are to continue at school after 14 are expected to enter one of the Secondary Schools at the age of 10. The courses in the Lower Secondary Schools (Pro-Gymnasium, Pro-Real-Gymnasium and Real-Schule) continue 6 years; those in the Higher Secondary Schools (Gymnasium, Real-Gymnasium and Ober-Real-Schule) carry the pupils on during 9 years. In the city of Munich since the fall of 1907 all boys have been required to remain at the Elementary School for an eighth year which is devoted mainly to manual work. The purpose is to give a definite bias towards their choice of a skilled occupation. This eighth year class is intended to form a basis or foundation for the Technical or Continuation Schools.

Dr. Kerschensteiner's Practice.

Dr. Kerschensteiner stated to the Commission that ten years ago of the 5,400 boys in the Continuation Schools of Munich, nearly 1,000 were in unskilled employment and in danger of becoming loafers. The result of bringing workshop instruction into the Elementary Schools, and of making the eighth year compulsory, was that in 1909 of 2,200 boys who left the highest class, 2,150 went at once into handwork or other skilled employment. This surpassed the expectation of the school authorities. While in part it was due to the re-modelling of the Industrial Continuation Schools with their fifty workshops, the first cause was undoubtedly the pleasure in the handwork itself gained in the Elementary School. The effort has been to get both Elementary and Continuation schools out of their isolation from all other influences affecting the life of the town child by connecting the work more closely than elsewhere with the activities of the workshop and the home. "Under the influence of joy in its work the child is more receptive, and we gain power to influence its other likings."

Books to Supplement Experiences.

In following out his fundamental aim for Vocational Education, Dr. Kerschensteiner has applied certain principles and methods to the Elementary Schools and courses. A statement of the governing principles will shed some light on the problems of education for communities in Canada.

Instead of beginning the work of the school with the analysis of words and sounds, and drill in word and sentence formation or building, the child begins his school life by the observation of the things in the school, in the home, and on the street, and by the use of these as a basis of the oral and written lessons in language, drawing, mathematics, history and geography; that is to say, the things of interest to the child in the world in which he lives are used as the material for his educational progress and growth.

From the time the child starts at school, he, or she, is regarded as an active living being, and not as a reservoir to hold or register a record of the things

set down in books to be committed to memory, to be available when called for. By means of observation lessons and lessons in science and industry, the child throughout the grades is being treated as an active being seeking growth and development through self-expression and self-realization.

When books are introduced, they are books that shed light upon the real life interests of the child and which widen the instruction and information given in the school itself.

Life and Work are Made the Central Features.

Up to a few years ago, the general Continuation Schools of Munich had carried on instruction which was largely a repetition and enlargement of the bookish work of the Elementary Schools, and that had a little interest for the young apprentices. Dr. Kerschensteiner proposed a new course of study or kind of work for the Continuation Schools, the central point in which was in each case to be the shop work or occupation of the pupil. Believing that the trade or occupation was, at that age, the centre of interest for the young worker, he introduced many different kinds of shops into the schools for apprentices and in these the typical processes of the various trades are carried on under the direction of competent workmen as instructors. He connected the work in drawing, in mathematics, in civics, and in fact all the work, with the shop practice.

The marked success which has resulted from this course indicates the wisdom of making the major life interests, appropriate for the pupil at any stage of his development, the central feature in the course of study.

Day Industrial Schools in Bavaria.

In Bavaria a number of Continuation Schools have been organized as Day Industrial Schools. Students are admitted to these after completing 6 years in the Elementary School course and when they are about 12 years of age. The course is sometimes one year and sometimes two years. In the former case the one year replaces the seventh year in the Elementary School, while the two year course takes the place of both the seventh and eighth years.

These schools aim at providing vocational education before the boys begin their work as apprentices. In this respect they differ from the ordinary Continuation School, which only admits pupils who have gone to work. These Day Industrial Schools require the full time of the pupils, and Apprentices' Continuation Schools and Drawing Schools for handicraftsmen are united with them. In Bavaria there are 16 of these schools with about 500 pupils.

In some other schools in Germany of a similar character the qualification for admission requires that the pupils shall have completed the course in the Elementary School.

These schools appear to be successful. Students finishing the course have the usual apprenticeship shortened as they are able to take up the work in the shop advantageously from the very beginning.

It is to be observed that these schools in Germany, with the exception of Munich, do not include workshop instruction where the students are made acquainted with materials, tools and machinery, and where they acquire some skill in the use of these. The instruction is theoretical without workshop experience, and in that respect these schools differ from the Trade Preparatory Schools of England, Scotland, Ireland, and the United States.

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(11) PRE-VOCATIONAL WORK IN ELEMENTARY SCHOOLS IN FRANCE.

Supplementary Courses for Boys.

These classes are intended to supplement the primary course for those pupils who, having completed the Primary School, will enter manual occupations. Pupils who hold the certificate of primary studies are eligible from 12 years of age. The total number of hours per week is 35, of which 15 are devoted to general education and 20 to Modelling, Drawing (freehand and geometrical), Singing, Recreation, and Manual Work. In the second year the number of hours for Drawing is reduced, and that for Manual Work proportionately increased. The general subjects are taken in the morning, the practical work and Drawing in the afternoon, the time-table for a week being as follows:

Morning.

Arithmetic and Accounting	1¾ hrs.
Geometry	2
Civics and Common Law	¾
History and Geography	2
French	3
Gymnastics	1
Physical Science and Technology	2½
Morals	¾
Recreation	1¼
	15

Afternoon.

Art Drawing	7 hrs.
Modelling	2¼
Geometrical Drawing	2
Manual Work	6½
Singing	1
Recreation	1¼
	20

In the second year—6 hrs. Drawing, and $7\frac{1}{4}$ hrs. Manual Work.

These classes are parallel to the Higher Primary Schools, but have more latitude in their syllabus, which is a continuation and amplification of the primary course. They may have smaller classes than the Higher Primary School.

Supplementary Courses for Girls.

These are arranged on the same plan as the classes for Boys, the total number of hours per week being $40\frac{1}{2}$, of which nearly one half may be counted for general education and the balance regarded as vocational. The time-table is as follows:—

Morning.

Morals	1 hr.
French	$4\frac{1}{4}$
Arithmetic	$2\frac{3}{4}$
History and Geography	$2\frac{3}{4}$
Science	1
Hygiene and Domestic Economy	$\frac{3}{4}$
Singing	$\frac{1}{2}$
Gymnastics	$\frac{1}{2}$
Civics and Law	$1\frac{1}{2}$
Cooking and Ironing (or Commercial)	1
	16

Afternoon.

Dressmaking	4 hrs.
Whitewear Making	4
Millinery	2
Drawing	8
Singing, Gymnastics	$\frac{1}{2}$
Book-keeping or English	2
Theory of Dressmaking	2
Theory of Whitewear Making	2
	$24\frac{1}{2}$

Higher Primary Schools in Paris.

Schools providing higher primary instruction are designed for young persons who are going to enter business or banks, industries or industrial arts, public or private offices, and vocational schools that do not require classical studies. They even lead to the bachelor's degree, to the Central School, or to the courses preparatory to the Day Schools of Mining, Bridges and Highways.

These schools, as a rule, take only day boarders. The instruction is free Those who can pay are furnished the noon meal for a trifling sum; others receive

meals free. Pupils enter on an examination open to pupils of private as well as public schools. Candidates must have been within the following age limits on October 1st of the year of examination: 1st year, 12 to 15; 2nd year, 13 to 16; 3rd year, 14 to 17..

There is no exception as to age limit. The ordinary course is 3 years; then the pupils must be examined for final certificate of higher primary studies.

No pupil is allowed to pass from 1st to 2nd year, or from 2nd to 3rd year, unless he has proved by positions and examination that he has profited by his courses.

The 3rd year class has two sections—Commercial and Industrial. In the latter, greater importance is attached to Mathematics, Physics and Drawing; in the former, to the applications of Arithmetic and Algebra to commercial and banking operations, Modern Languages, Commercial Geography, Penmanship, Accounting, Stenography, and Typewriting.

A 4th or supplementary year was opened for pupils holding the certificate of higher primary studies who show particular aptitude for the sciences, and they receive more extensive and special instruction to enable them to compete for the great Professional Schools.

By ministerial decree these schools are allowed a certain amount of liberty in fixing their programmes. For the first 3 years they follow the programmes of the Department as a basis for teaching; but these programmes, as well as time-tables, may be modified according to the existence either of a 4th year of studies, or of special sections which prepare pupils for definite careers. The 4th year programme, and also that of special sections, is made out for each school by the director or directress, after consulting the professors.

What gives a distinctive character and a special value to the instruction given in the Higher Primary Schools is the large number of special professors.

SECTION 4: EXAMPLES OF THE PRACTICE IN ELEMENTARY SCHOOLS IN TWO CITIES.

An embarrassment to the Commission has constantly arisen from the necessity of choosing between places and schools, to be cited for illustration of the best which was found as preparatory for, or as part of, Industrial Training and Technical Education. In many schools in Canada excellent examples were examined of correlations of Hand Training with book studies. Even where not much had been done in the organization of courses with that end definitely in view, the teachers generally said they were aiming towards as large a measure of that as was practicable under their circumstances. These matters are reported upon in Part IV of the Report.

The extended descriptions for Los Angeles, Cal., and Cincinnati, Ohio, give an outline of those features which the Commission considers will be suggestive and instructive for Canadian authorities.

(1) LOS ANGELES, CAL.

The school population of Los Angeles is 39,000, of which 6,500 are in the High Schools, promotion being made from Public to High Schools on recommendation of teachers of Public Schools. The following particulars of the Public School course are cited as representing what is being done by one of the most advanced and advancing communities whose schools were visited in the United States.

As set forth in a report of the School Board, the Public School course has been drafted after the high ideal expressed by Ruskin: "Education is to make people not only do the right things, but enjoy the right things, not merely industrious but to love industry, not merely learned but to love learning, not merely pure but to love purity, not merely just but to hunger and thirst after justice."

It is not offered as a perfect plan of school work, but the Board believes it is a step in the right direction. An effort has been made to cut away the useless parts and to make the course of study thoroughly practical throughout.

Mechanical Drawing.—A thorough course, put on a practical basis as far as possible for the convenience of those who work in the shops. Lectures are given illustrated by blackboard drawings, and diagrams. Further instruction is furnished in the form of blue prints and notes prepared by the instructor, but most of the instruction is individual.

Manual Training Course.—In addition to the shop work for those already engaged in the trades, a course similar to the manual training course of the high schools is presented. Sufficient time is given each subject to enable the pupils to understand the general principles of each trade, and in this way it is hoped that many boys will be enabled to decide for themselves in which branch of industry they may become most proficient.

The following subjects are presented:—Simple Bench Work in Wood, Pattern Making, Cabinet Making, Forging, Wood Turning, Machine Shop Practice, Mechanical Drawing, Elementary and Advanced, Elementary Architectural Drawing.

When properly qualified, pupils may elect certain courses and omit others; for instance, forging, foundry and machine shop work may be taken and woodworking omitted. In order to take up cabinet making or wood turning, a course in simple bench work in wood, similar to the work in the seventh and eighth grades of the day schools, must have been satisfactorily completed. The course in cabinet making must be completed before taking up pattern making. Persons who so desire, may spend more than one year in the cabinet work in order to make more substantial pieces of furniture.

Mechanical drawing must also be a part of each one of these courses.

Students for this course must be at least 16 years of age.

Arithmetic and Reading.

Several of the routine and traditional parts of Arithmetic have been eliminated entirely, but more attention is given the essentials of that important subject than heretofore. The work in Reading is outlined with a view of teaching pupils not merely how to read, but to read. The lists for home reading are an important part of it. More adequate provision is made for Spelling than in the past. The work in Writing is given both more time and more attention. English is given a large place in the course, and Grammar the small one it deserves. The most important modifications have been made in the knowledge subjects, such as History, Geography, Literature, and Nature Study. The common schools try to provide each child not only with the form, but also, as far as possible, with the content, of knowledge. These important studies are rightfully entitled to a larger measure of attention than the older education gave them.

With the conviction that instruction in morality is the most important part of school work, a course in the fundamental virtues, has been introduced to the end that no child may go forth from the schools without having had the lessons of honesty, uprightness and honor impressed upon him.

And being persuaded that all these things are of no avail unless the mind be habituated and trained to keep its body strong, provision has been made for daily lessons in the proper methods of walking, sitting, standing and breathing, that the schools may not fail to do their work of ministering to the health of the children in them.

The directions to teachers on the subjects which form the basis of Technical Education are interesting :

WRITING.

Finger writing is not allowed. The fingers are too short to propel the pen rapidly and easily, and consequently soon tire and fail to do writing easily and well. Finger writing is easy to learn, but tiring to use and much too slow and ugly for commercial purposes. We want instead to write with the muscles of the forearm. The half-arm movement is somewhat difficult to acquire, but when it is once learned it is easy and in all respects more satisfactory than the finger movement. Nothing but practice will bring the ability to write a good hand. Therefore the first necessity in learning to write well is that each teacher and each pupil stick to the thing daily and not only in the writing lesson, but in the spelling lesson and in every other lesson in which writing is required.

SPELLING.

The teaching of spelling must not be allowed to interfere with the teaching of writing. Position and movement are just as important in writing a spelling lesson as in a writing lesson. During the first year the writing should be entirely upon the blackboard. The writing of words in columns should be entirely given up in all grades. In place of narrow strips of paper the standard foolscap sheet should be used, and the words written from left to right one after the other until the line is filled. Too great emphasis upon the necessity for neatness will be sure to produce finger writing, the thing which we are striving with all our hearts to avoid. See that the spelling lesson is written according to the principles taught in the writing lesson, or not at all. The tendency of children to whisper words over to themselves while they are studying is probably nature's plan for re-enforcing the impression of sight by adding that of sound. The statement coming from many schools for defectives, that it is very difficult to teach the blind to spell, whereas the deaf learn without great effort, would seem to bear out the conclusion that impressions through

the eye are stronger than those coming in by way of the ear. To these forms of memory must be added the motor memories whereby the hand automatically writes the word that is in the mind, for it is ability to write the given word and write it in conjunction with other words in a sentence that is demanded. The teacher should strive after two main objects, a clear picture of the word as it looks on the page, combined with an audible or whispered iteration of the letters which compose it; and a readiness in transcribing with the pen this auto-visual image.

DRAWING.

The purpose of art education is not so much the securing of scientific accuracy as it is the encouraging of appreciation of what is good along art lines. We do not aim to make artists of our pupils, but we believe that only through practical experience in drawing and painting can they acquire observant, discriminating and intelligent eyes. The child, in his effort to create, gains a knowledge of what is good in shape, filling and color. We want our pupils to become aware of the good things in art, and to apply this knowledge not only to their drawings but to the furnishing of their homes and the choosing of their pictures and clothes. The child pays too much attention to detail, allowing the main idea to suffer. Because of this tendency toward over-elaboration, the value of simplicity in environment and personal expression must be emphasized. Art study should not remain a thing apart, but enter into the actual life of every child. The most important line of work in the drawing course is composition or design, because it supplies the basic principles of all art work. Any drawing in which special attention is paid to the pattern and the space divisions is a design. We begin composition in the lowest grades. There is opportunity even in a little child's work for individual selection and arrangement. In every grade, in every lesson, there should be opportunity for the pupil to exercise his individual choice in order that the work may be more than mere imitation.

NATURE STUDY.

In nature study there exists the happy combination of sense-training, motor-action and life out of doors. The beauty and order of the world acts to call forth the marvellous development of the child. In addition to the study of plants, flowers, animals and their industries, insects, birds, the heavenly bodies, weather, combustion, etc., instruction is given in all grades and in all classes during the entire school course in manners and morals and upon the nature of alcoholic drinks and narcotics and their effects upon the human system.

AGRICULTURE.

It is expected that in each class the teacher will introduce as far as possible simple experiments illustrative of the subject under consideration and encourage such experimentation by the pupils at their homes. Much opportunity should be given for class discussion and occasional written descriptions required. By arousing a proper interest in this subject it can be made a valuable adjunct to the home life of the pupil and also serve to engender a proper appreciation of the value and dignity of agriculture, the basic science of life.

PHYSICAL EXERCISE.

The school must set aside regularly-recurring periods when the mind can be rested, and the body strengthened by pleasing, helpful exercise. In the selection of muscular exercises the teacher should take those which tend to secure for the child: (1) A desirable hygienic effect on the body as a whole, for which nothing can take the place of the rollicking romping games which are played out of doors. Active games of the sort ordinarily played by school children are perfectly safe and healthy for boys and girls when not carried to extremes in duration and intensity. A moderate amount of fatigue is not unwholesome, but, in general, the game or exercise should stop short of severe fatigue. Every teacher should interest herself in the outdoor activities of her children, and seek to foster in her pupils a wholesome interest in such forms as will make for mental relaxation and fine physical tone. She will find that with thought and study she can suggest many games and activities to her classes which will prove interesting and profitable, and at the same time thereby indirectly increase her hold upon the affections of her children. (2) Certain desirable special effects, most important among which are the correction and prevention of faults of form or carriage of the body at rest and in motion. These faults are: failure to hold the neck erect; round or stooped shoulders; curvature of the spine; undue protrusion of abdomen. The physical exercises of the school room should be directed toward securing work for the big muscles of the back and neck, and to stretching the muscles of the breast, rather than to the

exercising of the smaller ones of the arms and legs, which can safely be left to the activities of the playground. Teachers will therefore be required to devise such suitable breathing and muscular exercises, and to give them to their classes at regular times each day. As far as practicable, when giving these muscular drills, the windows and the doors should be thrown wide open to the fresh air, or better still, if it can be done, have the drills conducted out of doors, in the open air.

MANUAL ARTS.

This course does not include the introduction of useless talks by teachers on topics not directly related to the work in hand, but it does assume that the construction work of the pupils should be made intelligent, and that a sufficient number of "whys" and wherefores"" regarding the work should be given in a manner that will closely relate the pupils' work to their immediate surroundings. It also requires and admits more individual choice and planning by both teachers and pupils, and it enables teachers to see the industrial processes in the schools as types of the industrial processes by which society keeps itself moving. This course of procedure will eventually lift the teachers out of dogmatic limitations. It provides also for large and useful pieces of work, a practical sequence of constructive principles, and introduces and makes pupils acquainted with a great variety of materials. It demands that the teachers must be able to draw and illustrate, group, classify and originate.

In general, the work for the third and fourth years contemplates cardboard construction and work in the textiles; that for the remaining grades comprises work in wood, and, to some extent, in other materials.

The plan contemplates that in addition to other things, pupils at the end of the eighth grade should be able to make a simple working drawing, read a simple blue print, and understand how blue prints are made.

DOMESTIC SCIENCE.

It is a generally accepted standard that only those subjects shall be admitted in the public school curriculum which have a vital bearing on life, and it is on this basis that domestic science has acquired its position in the elementary schools.

We claim that "right living should form the fourth R in education,"and that no subject is of more importance than domestic science. In our work the sociological aspect comes first, but we have arranged the course so that the educational side is not lost sight of. There is a rich field right here—the food problem in many different phases: the production and manufacture of food materials, their digestibility and their wholesomeness, the study of the food elements and the effect of heat upon them.

We begin to prepare the way for physics and chemistry, bacteriology and industrial history, while, at the same time, we are continually training in neatness, order, foresight and personal responsibility. We work both individually and in groups, thus fostering a spirit of mutual helpfulness, while we also develop each Clothing, Foods and Housing child's thoughtfulness.

The work begins in the fourth grade (A4), with simple problems in sewing which are designed to meet the requirements of the child nature, and at the same time give practice in the fundamental stitches. In the fifth grade the same plan is followed and more complex problems are given, but all of such nature that they may be completed before the interest of the pupil has been lost. Following this work comes a course in simple drafting (by measurements entirely), and the making of undergarments for themselves, and where the work is completed and time allows, a simple wash dress may be made before the completion of the work.

During the course, talks on different kinds of cloth, their value, use and cost are given, together with a simple study of their production and manufacture. The study of decoration, its use and abuse, comes in connection with the garment making, and the aim here is to lay a foundation upon which others may build securely.

When the pupils begin their cookery, they have reached the age when they want to know the reason of things. Hence we have tried to combine the discussion of the theory with the practical cleaning and cookery in proportions which would make the work not only intelligible to the pupil, but alive and desirable as well.

Beginning with water and milk we go on to the study of fruits, sugar, starch, vegetables, eggs, meat and fish. Following these come simple combinations and a sequence of batters and doughs.

In the last year of the course a few lessons are devoted to thel aundry, and as much time as possible is given to the study of the proper combination and serving of foods, together with their varying cost and food value.

Throughout the entire course the thought is emphasized that the home is the centre of strength, and that a thorough knowledge of how to care for it in the best and simplest way should be part of the life equipment of every girl.

The training in sanitation is continuous throughout the course, and during the last half year lessons are given on the simplest aids to the injured and on the care of the sick. Believing that in these grades the time for science as science has not yet come, the emphasis is laid upon the practical side, especially upon the skilful manipulation and right use of tools, the desirability of serving a few things perfectly cooked. Yet we aim to give sufficient knowledge of the elements of which foods are composed, the effect of heat upon these, their value in the body and why they should be combined in certain proportions, so that each girl may go from school able to prepare and serve simple, well combined meals in her own home.

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(2) CINCINNATI, OHIO.

The Commission was favorably impressed by the extent and quality of the educational work in Cincinnati. Some of the chief features of the Elementary Schools which have direct relation to preparation for occupations and for Industrial and Technical Instruction are described.

"No other school system in the nation, within the last decade, has been subjected to so many vicissitudes because of legislation, as has the school system of our city," remarks Superintendent Dyer in his Annual Report on Education in Cincinnati. He commends the progressive and liberal spirit of the Board since they have been responsible for the tax levy, which in 1910 was 8.5 mills.

English.

The Schoolmasters' Club has rendered great assistance in studying conditions in the teaching of English. The composition work of all the Fifth Grade classes in the city has been examined, and the committee that investigated made an extended report. Their suggestions are epitomized in the following series of propositions upon constructive work in English.

To compose is to put one's thoughts together with a definite end in view; to so group and interrelate them as to make them available for orderly use.

Composition is essentially a thinking exercise.

Teaching information that is to be used as a basis for composition work is not composition. It is Geography, History, Literature or something else.

The material to be composed must be familiar to the child before composing can begin. The composition work proper then should be the reorganization of that material for the solution of a genuinely new and interesting problem.

To give reality and immediacy to the work in composition, and to make it socially serviceable, we should continue to keep in view that it is, in most cases, to be undertaken with the idea of being used in helpful and entertaining ways in the class or in the school or elsewhere.

Merely reproducing a story or any piece of information from memory contains the minimum of genuine composing.

The problem selected for Composition should be of such a character as to furnish a strong motive for the best form in the first draft. The practice of copying corrected compositions encourages careless work in the originals and overemphasizes the mechanical points involved in copying.

The ideal in the finished composition should be, to have both the thought and the form childlike and natural. The imposing of adult standards of expression and mechanics hinders the necessary freedom and spontaneity.

Art.

The art work is under the direction of a Supervisor and eight assistants. Each goes to a series of schools, conducts the classes, and instructs the grade teachers how to continue the work. In the two lower grades the special teachers

gave little class instruction, but regular meetings of the teachers of these grades were held at eight different centres, thus making sixteen meetings per month. Each centre was in charge of a special teacher, who made a brief exposition of the month's work. Emphasis in the primary grades has been placed on illustrative Drawing, and in the upper grades on design and object Drawing. In the High Schools, courses of craft work have been introduced giving practice in design, both constructive and applied, and affording pupils a choice between academic and industrial work. The most popular work with teachers and pupils is nature representation in colour. This work is interesting from the standpoint of structure as well as of colour. While it is not the function of the art teacher to teach Nature Study as such, the lessons on nature representation incidentally open the way into the delightful mysteries of Nature to the children, especially in downtown districts, and they become familiar with the names, characteristics and beauties of plant life. An exhibit of more than two hundred charts, displaying the work of all grades, was sent to the National Convention of Art Supervisors at St. Louis, where it was given a prominent place. On its return, it was placed on exhibition at the Public Library. The Librarian reports that exhibits of this kind attract more attention from the public than any other, and that he believes them to be a source of education for the masses. There is increased interest in school room decoration, and local dealers are responding to the demand for a better class of pictures for that purpose. More suitable pictures can now be found in a single stock-room than could have been found in all the stores of the city collectively.

The Supervisor is frequently called to address clubs in the community upon art education. The Schoolmasters' Club gave an entire session to the subject, and made the following interesting deliverance showing the close relation of Art to school buildings, furnishings and education.

Old school buildings generally are ugly and box-like, violating both architectural and educational laws; remodelled buildings much improved in both respects; in new ones the lines are symmetrical, harmonious and beautiful, and there is special adaptation to the purposes of education.

In interiors the tinting in old buildings is the same in all rooms, and often trying to the eyes, while in new and remodelled buildings the effort is made to aid the sight in dark rooms and relieve eye-strain in bright ones. Recent removal of the blackboards from rear of rooms and from between windows gives larger areas for decorative treatment and pictures.

In all the city schools the disposition is to let the Department of Art or other competent authority dictate the colour scheme for walls and ceilings. This has secured harmonious effects and beautiful tinting.

Art objects have been purchased by various local organizations and by the scholars through entertainments, to the extent of several thousand dollars yearly, in the effort to beautify schoolrooms, auditoriums and corridors. Colour, story or action, or a combination of these, suitable to the needs and desires of children, is embodied in pictures for lower grades; ethical, classical or historical subjects in artistic representation for higher grades.

Landscape gardening has been done at three schools, window gardening at few schools, and a fine school garden at one, but little artistic treatment thus far at most, as the lots are too small.

The Club suggests the treatment of rooms and corridors in accordance with a general plan of decoration and treatment; the selection and arrangement of decorative effects and the purchase of art objects by a competent person or committee in conjunction with teacher or principal; school and home gardens should

be officially encouraged, seeds and bulbs furnished at cost or, if necessary, free, and the effect on the neighbourhood and pupils observed; the enlargement of school lots to permit beautifying of part of the grounds and the gardening of part is recommended. While local effort for securing works of art is a proper and commendable function for mothers', civic and students' organizations, the Club believes that the time is approaching when such work will and should be considered the duty of school boards.

The Women's Club has employed a Supervisor of Gardening, who visits schools and gives illustrated lectures, procures and distributes seeds, and oversees the work at home and school.

Art in its relation to industry and commerce is well set out as follows:—

> The educational, ethical and social aim must be consciously kept in view in all cases where art is used in or about schools, so that pupils leaving school after eight or twelve years' attendance may have taste and appreciation for good art in its various expressions. Everything about the school should be selected and arranged with an eye to its beauty as well as its utility. Beauty is utility, and is coming to be recognized in American life and industry. To create ideals of beauty for industrial uses is one aim in giving the pupils beautiful environment, artistic objects, and encouraging self expression in art work. The great problem in the industry of nations has come to be the esthetic one—how to give attractive and tasteful forms to productions so as to gain and hold the markets of the world.

At the beginning of 1909 a Normal Art Department was arranged between the Art School and the Board of Education, a course of one year in Normal Art being designed for students who were already expert in Art. All who took the course secured positions as Art teachers, most of them in near-by suburban towns. The course is maintained by the Board of Education as a department of the College for Teachers. It is taught by an expert teacher in the Drawing Department, under the guidance of the Supervisor of Art and the Dean of College for Teachers, but there is the closest affiliation possible with the Art School of the city, and the teacher conducting the work must be approved by that school. The course will be extended to two years. A pre-requisite for entrance is High School graduation and three years' special work at the Art School.

The Art Museum of the city is becoming a prominent factor in assisting the teachers in the esthetic education of the children by organized visits, lectures, collections of illustrative prints, etc.

Kindergartens.

The Kindergarten Training School is closely affiliated with the University of Cincinnati, and five of the recent appointees are graduates of both institutions. The students serve an apprenticeship for 6 months as cadets in one of the schools, and are then appointed in order of rank as determined in practice and by examination. The Kindergartners visit the homes of the children, supplying clothing when necessary; 1838 hours were devoted to visiting over 6000 homes in one year. A Kindergarten farm, rented by the Mothers' Club, was equipped by the Board of Education for playground purposes, and on each pleasant day in May and June two Kindergartens were taken out there, many mothers also going. In addition, almost every Kindergarten has some kind of a garden, and many excursions are made to parks, to the zoo, and to suburbs.

Manual Training.

The course in shop work extends from the sixth grade of elementary to and through High School. It is also given in all grades in the retarded and other special classes and schools, and to fourth and fifth grade children in a few places where these children are unusually mature. In the eighth grade many useful pieces of furniture for school or home are made, such as hat-racks, bulletin boards, tables, plant boxes, library chairs, book racks, sewing cabinets, hall seats and stereopticon stands.

Domestic Art.

Sewing is given in the sixth and seventh grades, Cooking in the eighth, and the same provisions for domestic work are made in special schools as for Manual Training. The Domestic Science work parallels the shop work throughout the elementary grades. In the High School the domestic art work continues throughout the course. As the pupils enter the High School with a knowledge of the stitches and their application, there is only a short review of handwork given. The main work of the first year is the use of the machine, taking of measurements and drafting of patterns, and the making of garments according to the drafted pattern, During the year, the students make a four-piece suit of underwear, a simple shirtwaist suit of wash material and a more elaborate skirt or waist, or both. These garments are made by machine, but a certain amount of handwork is required on them, and most of the final dresses are embroidered by hand. The second year's work includes a fall and spring term of millinery and a winter term of dressmaking. In the millinery work the students are taught the principles of the work, such as making of bandeaux, making of frames according to measurement and from sketches, making and covering of wire and buckram frames according to measurement, making of folds, facing bows, and trimming. This includes study of design, fitness of material and colour scheme. The winter period is devoted to dressmaking of woollen materials and the making of a cloth skirt and a waist of wool or silk or a whole dress. The spring term is devoted to the making of an elaborate thin dress.

In the first year patterns are drafted by the students for two reasons: First, that the students may have a knowledge of the principles upon which the patterns are drafted and thus be able to handle patterns intelligently; and secondly, because the bought patterns rarely fit the growing girl. In the second year bought patterns are used so that the student may have experience in fitting the pattern to the particular needs of the person. During both years much attention to, and instruction concerning, fabrics is given. The fitness, durability, style and cost of material are considered, and each student keeps a record of the materials used, cost of each, and total cost of each article made. The first year, eight periods a week are given to the construction work and one period to Drawing; the second year, ten periods a week, one of which is devoted to Drawing and Design.

Extension Work of Schools.

Under this head are here included those activities conducted outside of the conventional school hours under the direction of the Board—vacation schools, summer academic school, evening schools, playgrounds, and continuation (day) school.

The pupils of each of these schools are classified upon the basis of age into advanced, primary and kindergarten. The advanced classes are conducted on the departmental plan, classes changing every forty-five minutes. The nature of the work was as follows:

For Boys.—Bent iron, wood-sloyd, basketry, raffia weaving, drawing, water-colour work, clay modelling, cardboard, nature study, stories, songs and games, gymnasium and baths.

For Girls.—Sewing, millinery, cooking, basketry, raffia weaving, drawing, water-colour work, clay modelling, cardboard, nature study, stories, songs and games, gymnasium and baths. The millinery department, a new feature, was so pronounced a success that it will always be one of the attractive features of the vacation school curriculum. Paper flower making and beadwork were introduced into one or two of the schools by way of experiment, and both were found worth while. Cooking, notwithstanding the warm weather, was one of the attractions for the girls.

Primary Department.—Much of the work mentioned above was carried on in this department of course adapted to the little fingers that were to perform it. These little folks had their songs, their storytime and their playtime, and were as busy and as happy as could be.

Kindergarten.—In this department regular kindergarten work was carried on, carefully planned, of course, for a six weeks' course. The children of this department were given as much of the outdoor life as possible, excursions to the parks near the several schools being made two or three times a week.

All the children were given occasional dips into the outdoor life under the guidance of the games teachers, being taken by them to the parks for their games.

It was discovered very early in the term that, while all the children loved their play under the direction of the enthusiastic teachers, a number of them wished to do handicraft work as well. There was no possibility of responding to the wishes of the boys along these lines, but sewing and crocheting classes were organized for the girls, and once formed, they continued through the summer. One young blind girl took great pains in initiating some of the girls into the mysteries of raffia-work, and presently she had quite a flourishing class. There were story classes for both boys and girls, and occasional lantern lectures.

The Kindergarten was a most interesting feature of the work of the playground, and it was well patronized. All summer this class of little people held its own as to numbers, and without doubt many housebound mothers took comfort in the thought that their little folks were free from the dangers of the streets, because of this safe and beautiful place. These Kindergartens had their playtime at a regular hour each morning, and then the sandboxes, slides, seesaws, rings and swings proved quite as fascinating as the lovely games indoors.

In addition to the playgrounds, each of the four vacation schools gave attention to the games and play, each school having two teachers for this purpose.

Evening Schools.

The total enrolment in 1909 was 4,418, 1,775 of whom were females, the total cost to the Board being $25,757.

The industrial branches offered consist of sewing, dressmaking, millinery, art needlework, and cooking; cabinet making, carpentry, wood-turning, pattern-making, mechanical and architectural drawing, forging, machine shop practice, etc. In the new schools gymnasium and music classes are also held. Approximately one-half of the student's time is taken up with mechanical drawing and academic instruction incidental to his trade, and vitally essential to the first-class artisan.

It is found that a continuous course, arranged in an orderly sequence of topics or principles, and running for at least two years, holds students better and is altogether more profitable than short, take-what-you-please courses. The commercial students were for a time fluctuating and irregular, but when a full-two-year course of hard work was arranged they became serious in their work, faithful in attendance, and their number in a year or two increased four-fold—to 800. It was the same in the academic Night High School, when a systematic four-year course leading to an accredited diploma was established; instead of proving a death-blow, as some feared, it was a new birth, and the High Schools since have grown not only in the confidence and respect of higher institutions, but many-fold in numbers and character of work done. The number of graduates last May from Evening High Schools was 199—83 from the academic four-year course, and 116 from the commercial two-year course.

Instruction in shop work is largely individual in order that it may be supplemental to the pupil's regular shop work, and not a repetition. For example: A pupil would be given instruction in his chosen trade, but it would be applied to the making of machines or parts of machines other than those with which he comes in contact every day in order to broaden his view.

Pattern Making.—This course is intended for pattern makers and pattern maker apprentices. Applicants should be at least 16 years of age, and should have had at least one year's experience in a pattern shop. Every effort is made by means of special problems to make the work as practical as possible to each individual pupil.

Forging is offered for blacksmiths and blacksmiths' helpers, who may be anxious to get a variety of work not offered in daily practice, supplemented by lantern slide lectures and talks on the mining and making of iron and steel, transportation and reduction of ores, mining and transportation of coal, and the making of coke.

A Special Course is offered to machinist apprentices who now attend the Continuation School, not to make blacksmiths, but to learn to forge and temper lathe tools, planer tools, and cold chisels, and so gain a better knowledge

of the properties of steel under heat and temper. This course is also supplemented by lantern slide lectures. The shop is equipped with the latest type of forges and power tools, and also with a sufficient supply of hand tools needed for the work.

The courses consists of demonstrations and talks on building of fires, characteristics of good forging coal and coke, sulphur in coal and its effect on steel, the use of various kinds of flux, followed by practical work at the forge consisting of forming, bending, upsetting, welding, the use of jigs and templates for duplicate work, and the making of various useful articles, case-hardening iron and soft steel by the various processes; also a study of the various tempers by the use of colours and shades, using water, oil, and various chemicals in hardening and tempering; the forging and tempering of machinists', blacksmiths' and other special tools, including taps, dies, reamers, milling cutters, etc.

Architectural Drawing.—For carpenters and apprentices and those who wish to fit themselves for work in architects' offices. This course consists of a study of house framing and construction and the drawing of plans, elevations and details of wooden frame and brick houses.

Machine Shop Practice.—The newly equipped shop with the most modern type of Cincinnati-made tools, offers to machinists and apprentices an opportunity to become all-round workmen, to get away from being mere machine tenders and to become expert on a variety of work and machines. A few months spent in this shop would be an education to any machinist, merely to study the various types of tools assembled in one room. It is the most complete and the only collection of all kinds of Cincinnati machines in the country. The course consists of work on the planer, shaper, milling machine, cutter, grinder, and various types of lathes. Opportunity for fine vise work is offered, and illustrated lectures and talks on the work done in various parts of the world.

SECTION 5 : PHYSICAL CULTURE AND HYGIENE.

In Germany, Denmark and Switzerland very ample provision in the way of gymnasium accommodation and equipment is provided for all grades of schools. In the larger towns Elementary Schools are frequently, if not quite generally, provided with gymnasiums such as one would not find in any except the High Schools or Colleges of our largest cities.

In Denmark at a Central Rural School one half the ground floor space of the building was alloted to the gymnasium. This indicates that the physical exercises and physical culture of the gymnasium are used there to supplement the ordinary exercises which are found in abundance among the young people of Denmark, who lead very active and industrious lives. The great attention paid to these in the schools is doubtless due to the influence of the many citizens who have passed through the People's High Schools. In them Singing and Physical Culture have a recognized place of great value. One mature woman

said, on the occasion of our visit, that her course at the People's High School had given a meaning to her whole life. When asked what subjects, course or courses had done most good she said "History, Singing and Physical Culture." She was representative of a large class of Danish women whose intelligence, housekeeping ability and general culture are worthy of all admiration and praise.

Physical Culture.

The Swedish system of drill is generally followed. A very brief description of its essential features, appropriate for this reference, is taken from pages 157-8 of "*Education and the Larger Life.*" By C. Hanford Henderson.*

The method of this gymnastic is very simple. It uses very little apparatus, and may even be carried on without any whatever. All it requires is a large open floor or a hard dirt court. Bars and ladders and wooden horses are used where available, but they are not essential. The system is primarily a scheme for general bodily exercise prompted by individual will power. It seeks to cultivate the will through the greater control of the body. It is, indeed, a system of carefully thoughtout organic education. Like all true sense culture, it belongs more properly under the head of mental culture than under the head of what is commonly meant by physical culture. Notice some of its fundamental principles. It dispenses with music, because the rhythm then becomes the guiding factor in place of the human will. It dispenses with all action on the part of the instructor during the class movement, for this would substitute imitation for the directing power of the will. Both of these provisions are very subtle, and they do accomplish their purpose. The movement is explained and illustrated by the instructor, and each child knows perfectly what is to be done. But he must do it himself, of his own volition, and quite unaided by music or model. All commands are short and clear, so that they may reach the intelligence with the utmost directness and speed. The response must be equally quick and direct. The first command—"Attention!" asks that the faculties be alert and ready to act, and the body in a suitable position of vantage. The second command names the part of the body to be called into action. The third command tells the direction of motion. The last command describes the motion and calls for it. Thus: "Attention—right leg—upward—bend!" Each word is spoken quickly and distinctly. The exercise is not only meant to develop the body through the muscular exertion required, but still more to develop the power of command. The exercises are all light, and the majority of them would scarcely bring fatigue if persisted in for considerable periods of time. But where the system is well carried out, and the commands follow one another in fairly rapid succession, mental fatigue comes before muscular fatigue, and indicates very positively where the work is being done. The whole purpose of the Swedish drill is to increase the health of the body, to make it alert, quick, usable; above all, to put it under the absolute control of the will.

WORK AND PLAY.

Purposive exercises make the courses in Physical Culture attractive, and when young people participate in them they are often thereby led to take up courses in other studies and work. The physical exercises of work have perhaps the highest value, especially when they are called forth in response to definite purposes and achieve something desired by the worker. The purposive factors in work and play put them on a higher plane of service for development than exercises followed with the best of apparatus, but without conscious meaning or purpose in the mind of the pupil.

WHAT IS DONE AT EDINBURGH.

The Board has appointed a Superintendent who gives his whole time to the supervision and inspection of the work of Physical Training, including

* Published by Houghton Mifflin Company.

swimming and games, in all the day and evening schools of the Board. In many Elementary Schools the teaching of Physical Exercises is severely handicapped through want of space.

In all the schools attention is given to Organised Games. A large number of the teachers devote part of their spare time in the evenings and on Saturdays to the superintendence of these games. Associated with the Board's Standing Committee on Games, which has supervision of the games, recreations, and athletic sports taken part in by the scholars, there is an Advisory Committee of Teachers and Officials, whose duty it is to make recommendations to the Games Committee. Each game is managed by a Committee of Teachers representing the schools taking part in the game, and these Committees are responsible to the Advisory Committee.

All this is typical of the best that is being done in other progressive cities, where also notable headway is being made, in education for vocational and social efficiency.

The Teaching of Hygiene.

A most excellent paper on "The Teaching of Hygiene in the Public Schools" was read by Miss Edith Hurlbatt, M.A., Head of the Royal Victoria College, Montreal, before the Public School Society, at the National Convention, Montreal, February 23, 1912. It embodies aspects of the question which were impressed upon the Commission by visits to many schools and conversations with many leading educators. The following brief extracts are selected as expressing what the Commission heartily endorses.

Hygiene is a late comer into the company of subjects that have to be dealt with in the primary school. But it may be assumed now that on this continent it is recognized that hygiene has a place among the subjects to be dealt with in the school course.

The scope of the idea of sanitation has been greatly enlarged; it is not only the school offices, etc., the provision of drinking water, the provision of washing appliances and the adequate ventilation of the teaching rooms which are now looked at from the point of view of sanitation, but also the lighting, the arrangements for the hanging hats and cloaks and for the drying of clothes (so that the children may "change their feet," as the Scotch say), the design for seats and desks and facilities for physical exercise.

The provision of space for exercise is now being insisted upon by progressive educational authorities—for example, the English Board of Education is withholding grants in aid of buildings which make no adequate provision for this purpose.

THE HEALTH PROBLEM.

But the health problem must be recognized as a school problem not merely because of the large or small proportion of sickly and ill-developed children who find their way into schools, but because school life exposes children to an accumulation of conditions unfavourable to their healthy and normal development, calculated to affect injuriously their future social power. These children are now to be given instruction in hygiene and physical education, and a place is being claimed for these subjects in the regular curriculum of the school.

There are three factors which have hastened the movement for placing hygiene in the school curriculum. The public and especially medical opinion, having been aroused on the subject of physical deterioration, and having been discouraged by the apparent indifference of parents and educational authorities to the need of enlightening ignorance which now leads to the perpetuation of preventable defects and diseases, has at times pressed for the direct teaching of hygiene with an emphasis upon its pathological aspect rather than upon the laws of healthy living.

A second factor has been the influence of supporters of the temperance movement with their plea that throughout the child's school life a constant stress should be laid upon the evil effects of the use of narcotics and stimulants.

The third factor has been the desire of many—overwhelmed by the gravity of the problem of infant mortality—that the public schools should be the direct educational agencies for making girls aware of their future duties as mothers, should instruct them in the care of infants and in those things which go to home making. "Of what avail," say they, "are the schools if the girls do not carry away the knowledge that will help them in their daily life and upon which the happiness and welfare of their families will depend?"

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KNOWLEDGE FOR GOOD HABITS.

The aim of the teaching of personal school hygiene should be to give knowledge upon which to build up good habits and high ideals in respect to physical and moral life—not the perverse method of describing and explaining disease, however fully accompanied with plentiful warnings. Educational opinion tends toward the belief that the laws of healthy living are better taught during the earlier periods of school life, through actual practice and by the agency of nature study or elementary science; and that direct teaching should be confined to the latest years, the ground having long been prepared by continued and well-diversified indirect instruction. Indeed, according to this view, very little direct teaching would begin in the public schools owing to the early age at which pupils leave, though in the high school, in which the pupil remains during adolescence, the instruction can be more normal and direct, though still preferably correlated with biology and with domestic science. In secondary schools the teaching given in elementary biology as well as in chemistry and in physics affords even greater opportunities for laying a foundation upon which to build concurrent or subsequently permanent and practical interest in hygiene. "But the mere formal treatment of hygiene should never take the place entirely of the unforced effective application of any line of thought or interest to practical human living; for only by the latter means can hygiene be made one of the great humanistic studies. The teacher with inspiring personality, keen insight, sound judgment, unselfish devotion to the interest of the child, will be able to utilize the teaching of hygiene not only for the pupil's self-protection, but as a means of broadening the intellectual horizon, for deepening the sense of social responsibility, and for the raising and strengthening of ethical ideals." Hence the question of equipping the teacher with the right knowledge and the way of using it has to be met.

TRAINING FOR TEACHERS.

In 1908 the International Congress on School Hygiene passed the following resolution: "Whereas the improvement in health of, and the hygienic conditions surrounding, school children depend largely upon the intelligent coöperation, the competency, the interest and faithfulness of teachers and principals in matters of hygienic importance, therefore be it resolved that all schools having courses for the training of teachers should give instruction in (a) personal and school hygiene and (b) the principles and practice of physical training (and to each of these subjects should be given as much time as to the major subjects in the course), and that the principles and practice of hygiene should form a regular part of the curriculum of all institutes in which students are trained to become teachers in schools of all grades."

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It is understood, from early announcements, to be the intention of the executive committee of the Strathcona Trust, which is made up of representatives of the Department of Militia and Defence and representatives of the educational authorities of the various provinces, to recommend the introduction into the schools of the system of school drills now in use in England, There it has been already recognized, to quote the English Board of Education, that "a system of physical exercise should aim not merely at improving the physique of the scholars; it should tend in addition to develop qualities of alertness, decision, concentration, and should promote the complete coördination of the movements of the body under the control of the mind." The latter aim, it is pointed out, has an intimate connection with the rest of the school work, and in so far as a course carries out that aim it is educational in the best sense."

CHAPTER II: SECONDARY AND HIGHER EDUCATION IN RELATION TO INDUSTRIAL TRAINING AND TECHNICAL EDUCATION.

SECTION 1: SECONDARY SCHOOLS.

A common criticism levelled against Secondary Education in Canada has been that the Secondary School has tended to give the youths a distaste for manual labour, and has dulled any inclination towards skilled handwork from want of opportunity to develop ability in that direction; also that it has been organized and conducted chiefly to prepare for the Colleges and learned professions, and does not give good preparatory training for the life and occupations of those who have to leave school at about 16 or 18 years of age.

Another criticism has arisen from the fact that the kind of education offered in the Secondary Schools of Canada has not been such as to appeal to the large number of boys and girls who are rather slow, or have little ability or interest, in exclusively book or theoretical studies or subjects, but who have intellectual interest and power in productive and constructive work. Experience has indicated that many youths, who are negligent, uninterested and unsuccessful in book studies and purely theoretical subjects, are attentive, diligent, interested and successful in construction and expression work calling for skill of hand, closeness of observation, exercise of judgment, initiative and co-operation with their fellows.

Faulty Methods of Instruction.

The opinion has been expressed by members of the Faculties of Technical Colleges that the Secondary Schools have not given the students the right sort of preparation in the sciences and have not qualified them adequately in knowledge of materials and the use of tools and instruments, to enter upon the College courses without waste of time. The faulty method has had an eye chiefly to the imparting of information as recorded in books, and to the use of books as the chief means of education. When new science subjects were introtroduced in the course of study of Secondary and Elementary Schools these usually came as the result of standards of examination from the University or College. The method of presenting a subject to students of 18 years and over at the University or College had been by adopting a logical intellectual treatment appropriate to mature minds in acquiring a new subject. The more recent laboratory methods of teaching have begun to prevail in Secondary Schools and to remove the reproach. In this connection the method of teaching science outlined hereafter by Dr. C. J. Lynde is commended.

There have been statements also to the effect that the training in the use of language had not given the students ability to express themselves clearly, correctly and adequately on the actual work they were doing or to express their opinion or judgment on their experiences or observations.

Little Provision for Hand Workers.

Secondary Education in Canada has been almost entirely of a sort which occupies the whole time of those receiving it. In other countries Secondary or Supplementary Education is carried on while the young people are actively engaged in gainful occupations and following employment or learning a trade which will serve them in mature years. For example, in the Co-operative Industrial Schools of the United States, young men from 15 years of age upward attend High School and workshops, where they are employed, week about. In the Continuation Schools of Germany the young people engaged in gainful occupations attend Continuation Schools from four to ten hours per week. In several states in Germany the attendance at the school must be over before seven o'clock in the evening. Frequently the employers arrange to let the young workers free to attend the school in the morning or during the forenoon when they are fresh and most able to profit by the opportunities they have.

At present in Canada there is scarcely any provision for Supplementary Education for those who have left school at about 14 to go to work and who desire later to resume continuous attendance at a school which will help them in their occupations. In Germany, particularly, there are many Secondary Technical Schools to which such workers can go for courses of from one to three years. These provide Secondary Technical Education for suitable young men seeking qualification as foremen or superintendents and for the directive positions of the minor sort. Those who are to fill the highest positions as superintendents and directors are often those who have been able to take advantage of the highest technical institutions which in Germany are known as Technical High Schools. They do not correspond with the Technical High Schools in Canada or the United States but are on a level with, or higher than, the faculties of applied science of our Colleges and Universities.

(1) METHODS OF TEACHING SCIENCE.

The laboratory method, especially where there is not an elaborately appointed laboratory, has been found in every respect better than the lecture or book method of instruction alone. The sequence in which the several experiences of the educational steps follow each other for young children holds good also among young men and women at least until 17 or 18 years of age. The following steps which are not separable from each other indicate an order of sequence which is suggestive:—

Observing carefully and closely and using impressions from all the avenues of intake, together with instruction received and previous knowledge possessed, to form new ideas or concepts; reflecting on such ideas and planning towards some act or series of acts for the expression of these ideas; giving expression to them in language, drawing, calculations, actions or material products; reasoning to conclusions from any general principle deduced and applying it to other cases.

A valuable memorandum was submitted to the Commission by Dr. C. J. Lynde, Professor of Physics, Macdonald College, Que., on the teaching of the sciences of Physics and Chemistry in the Elementary and High Schools of Canada. The principles and methods which it sets forth are commended particularly to all authorities responsible for the courses in science in Secondary Schools. The following is the memorandum:—

SUGGESTIONS REGARDING THE TEACHING OF PHYSICS AND CHEMISTRY IN THE ELEMENTARY AND HIGH SCHOOLS OF CANADA.

Two methods of teaching the sciences.—In teaching the sciences to beginning students, the instructor may follow one of two courses:

(1) He may treat the subject logically from the standpoint of the science, or,

(2) He may treat it logically from the standpoint of the development of the child.

In teaching botany, for example, one method is to start with the simple cell and develop the subject from that; the other is to take the children out into the fields, gardens and orchards, draw out their knowledge of the familiar grasses, weeds, roots, tubers, trees, fruit, etc., and develop the subject from the knowledge they already possess. This latter method seems to be the rational one.

Elementary science teaching in Canada.—Judging from the text books in use, the elementary science teaching in Canada is of the former kind. The subject is developed logically from the standpoint of the science, but no consideration is shown for the child. In the majority of cases no attempt is made to lead from the known to the unknown; to use the knowledge the child possesses as a basis for an advance into a wider field.

The order in which the subject matter is presented is the same as that used in the universities in training scientists. The text books used are university text books simplified; the subject matter is simpler, but the order in which it is presented is the same.

The laboratory courses are university laboratory courses made down; the child is asked to make the same experiments a university student is asked to make, only the apparatus is cheaper and therefore gives poorer results.

The reason.—The reason for this state of affairs is that the sciences were first taught in colleges and universities, and the text books were written for college and university students. When the sciences were later taught in elementary and high schools, the text books and laboratory manuals prepared were copied from those used in colleges and universities.

The result is that the books at present in use are not suited to the needs of young students. They aim at the logical development of the subject matter, whereas they should aim at the logical development of the powers of the student.

WHY ?

Why do we wish boys and girls to study the sciences?—In order to answer the question, "How should the sciences be taught to beginners?" we should first answer the question, "Why do we wish boys and girls to study the sciences?"

The answer to the question "Why do we wish boys and girls to study the sciences?" is somewhat as follows.—The human race, in its long struggle upwards from savagery, has acquired a vast fund of knowledge of nature; this knowledge is a treasure to the race; it has been classified and made exact, and laws have been discovered which tell us how the forces in nature will act under given conditions.

We wish boys and girls to study the sciences, because we wish them to acquire the most essential parts of this knowledge without the long struggle, and because we wish to give them, through this knowledge, the power,—

(1) To understand and control the forces of nature for their own benefit and the benefit of others;

(2) To find new ways in which these forces may be made to serve mankind;

(3) Possibly to discover new forces in nature or new manifestations of the forces already known.

In a word, we wish to make them, as far as possible, masters of their environment, through knowledge of that environment.

HOW ?

Before answering the question "How should the sciences be taught to beginners ?" we should distinguish between the meanings of the two words, *information* and *knowledge*. Information is that which we have been told, and knowledge is that which we have learned by experience.

In planning how to teach the sciences to beginners we should remember four things:

(1) That our object is to have the child obtain power through *knowledge*.
(2) That all teaching should begin with the known and lead to the unknown.
(3) That the child has an intense interest in natural phenomena, and is eager to understand them.
(4) That the child comes to a beginning class in any science with a large knowledge of nature which he has been acquiring ever since he was born. This knowledge is more or less unsystematized and inexact.

The answer to the question, "How should we teach the sciences to beginners?" is somewhat as follows:—

(1) We should begin with those things in nature in which the child is *interested* and of which he has firsthand *knowledge*.
(2) This knowledge should be organized, extended, and made exact; the approach to the laws of nature should be made through this knowledge; and when the law is understood the child should be led to see that it helps him to group together and understand certain phenomena with which he is familiar, and then to group together and understand phenomena with which he is less familiar.
(3) The work of organizing, extending and making exact the knowledge possessed by the child should be aided by experiments which the child himself makes.

PHYSICS.

When the teacher lays stress upon the logical presentation of the subject matter rather than upon the logical development of the powers of the child he is engaged in teaching Physics, whereas he should be engaged in teaching children.

In many cases no attempt is made to lead from the known to the unknown, to use what the child knows of the physical world about him as a basis for an advance into the unknown. For example; the course upon "Heat" usually consists of exercises in expansion, specific heat and latent heat, and no reference is made to the many heat appliances with which the child is familiar—the kitchen range, the hot air heating system, the hot water heating system, the steam heating system, the method of supplying the house with hot water, the steam cooker, the double boiler, the refrigerator, the ice-cream freezer, double windows, clothes, etc., etc. The child has a large fund of first-hand knowledge of heat and heat appliances which should serve as an excellent foundation for a course on heat, but, as a general rule, no use whatever is made of it.

The method of teaching the other branches of Physics is open to the same criticism.

In each branch of the subject:—

(1) Begin with those things in which the student is interested and of which he has first-hand knowledge.

(2) Draw out this knowledge; organize it and make it exact, and then use it as the basis for the advance into the unknown. As each new fact or physical law is understood by the student, lead him to correlate it with his first-hand knowledge.

(3) Treat the experiments as the means and not as the end; lead the student to ask the question to which the experiment supplies the answer.

Examples.

Mechanics:—The study of Mechanics might be entered upon through the knowledge the student possesses of the tools and mechanical appliances used about the home, the farm, etc., the crowbar, wheelbarrow, pitchfork, shovel, scales, windlass, pulleys, jackscrew, etc. Draw out this knowledge, organize it and make it exact. Then take up Mechanics systematically, and as each new fact or law is brought out, lead the student to correlate it with the knowledge he has of tools and mechanical appliances.

Heat:—Similarly the study of heat might be entered upon through the knowledge the student has of the heat appliances used about the home: the kitchen range, the hot air heating system, the hot water heating system, the steam heating system, the method of supplying hot water to the home, the steam cooker, the fireless cooker, the refrigerator, the ice-cream freezer, double windows, clothes, etc.

Electricity:—The average young student is intensely interested in electricity, but has little first-hand knowledge of it; for this reason the early experiments he makes should be designed to supply this first-hand knowledge. They should be qualitative rather than quantitative. For example: allow him to take apart and put together electric cells, make permanent magnets and experiment with them; make electro magnets, examine and install the electric bell with push button; experiment with telegraph instruments; light small electric lights by means of batteries and by means of a hand-power dynamo; take apart and put together a hand-power dynamo, a small motor, and experiment with them; use two telephone receivers as telephones; examine many electrical heating and cooking devices and many motors in use; trace the wiring of a house; trace the current from a dynamo in the power house to the fixtures in the home (if possible); visit an electric light plant; street car railway power house; telephone central station, etc. Use the first-hand knowledge gained in this way as the basis for the more systematic course in electricity.

Light:—Begin with the sources of light in the house, the best arrangement of lighting fixtures in the different roome in the home, the library, dining-room, kitchen, bedrooms, etc.

Sound:—Begin with the simpler musical instruments, the guitar, violin, piano, whistle. Then take up the study of sound systematically, and as each new fact or law is brought out, correlate it to the knowledge possessed by the student.

CHEMISTRY.

Chemistry is probably the most difficult science to teach to beginners. The present method seems to the writer to be entirely wrong, and this opinion is held by many university teachers who state that they would prefer to have their students come to them without any preliminary training in chemistry, rather than have to deal with the product at present turned out.

Instead of the present course, which is exactly the elementary course used in colleges and universities, the child might be given a course in what might be called fundamental operations.

Fundamental operations.—This course would teach the child how the things are made which he sees about him and uses every day. For example, teach him how the following are made:—bricks, lime, cement, mortar, plaster, concrete, glass, paper, metals, lumber, paint, etc.; also flour, bread, butter, cheese, syrup, sugar, vinegar, salt, pepper, leather, cotton, linen, woollens, starch, candles, soap, coal gas, etc., etc.

This should be partly a laboratory course and partly a reading course. The child should, as far as possible, *gather the raw material*, bring it into the laboratory, and *make the thing*, while reading about the method of making it.

Examples.

For example, with a simple furnace the child could gather clay, bring it into the laboratory and make a brick while reading about how bricks are made. Similarly, using the same furnace, he could gather the raw material and make lime, cement, glass and pottery. Also with the furnace he could reduce one or more of the metals from their ores.

He could go into the bush, gather different kinds of wood, finish them, and learn the qualities of different kinds of lumber.

He could gather the proper wood, and make a rough paper.

He could see an animal skinned, take a piece of the skin, gather oak or hemlock bark, make an extract of it, and tan the skin into leather, with and without the fur.

He could use the fat of the animal to make soap and candles.

He could milk a cow and make butter and cheese.

He could gather wheat and make flour, and turn the flour into bread.

He could gather oats, make meal, and turn it into porridge.

He could gather sugar beets and extract the sugar, also extract sugar from sugar cane supplied to him.

He could gather potatoes and extract the starch; wool and flax and make thread and cloth.

He could learn how to preserve meats, fruits, eggs, etc.

He could make syrup, vinegar, baking powder, coal gas, etc., etc.

This course would be intensely interesting to the child. It would touch "nature study" on one side and "manual training" and art on the other. It would be an excellent training for life, and would give the finest kind of foundation for a systematic course in chemistry.

SESSIONAL PAPER No. 191d

(2) THE TEACHING OF SCIENCE IN SECONDARY SCHOOLS IN PRUSSIA.

The teaching of science has received much attention in Germany. The official Prussian Regulations for schools for girls set forth the aims and methods as follows:—

A—GENERAL AIM.

(1) *Natural History.*—The close and thoughtful observation of nature. Elementary notions of structure and the most important physiological phenomena of animals and plants; of the mutual relations of the different living creatures and their relations to man. General laws of health.

(2) *Natural Science.*—To impart, by means of experiments, an elementary knowledge of the chief laws and processes of Physics and of Chemistry, especially of those which are most important for domestic and social life, and which help to determine the progress of civilization in these days.

B—PROGRAMME OF WORK.

Class VI. Two hours a week.—Description of simple flowering plants actually before the pupil. Explanation of the most important parts and forms of the roots, stems, leaves, flowers and fruits. Fundamental conditions of the lives of plants. Description of some important native mammals and birds, in relation to form, colour and size from specimens at hand, or illustrations if sufficiently large, together with information about their mode of life, their usefulness or their harmfulness.

Class V. Two hours a week.—To extend and supplement the work of Class VI with the addition of the study of reptiles, amphibious animals, and fishes. Fundamental principles of anatomy of human beings.

Class IV. Two hours a week.—Comparative description of the related genera and species of flowering plants from actual specimens. Biology of plants. Poisonous plants. The lower animals, particularly the useful and the harmful, as well as their enemies, with especial reference to insects and their significance in the economy of nature. The commonest minerals of everyday life according to their appearance, extraction and value.

Class III. Two hours a week.—The most important cultivated plants and their uses. Fundamental principles of the anatomy and physiology of plants. The most important facts about cryptogams and the diseases of plants. The structure and physiology of the human body, with instruction in hygiene.

Class II. Two hours a week.—The principal chemical processes, with special reference to mineralogy and geology. Physics: Heat, magnetism, electricity.

Class I. Two hours a week.—Equilibrium and motion of solid, fluid, and gaseous bodies; sound; light.

C—REMARKS ON METHOD.

In view of the wide extent of ground to be covered in these subjects, and the comparatively small amount of time that can be given to them, very great care must be exercised in making a suitable selection. The aim of the teacher must be first of all to guide the pupils to observe and to think for themselves, and carefully to avoid overburdening them with mere memory work. Experiments and direct observation are in all lessons to take the foremost place. It is desirable to enable the pupils to carry out experiments themselves. No importance is to be attached to a knowledge of botanical and zoological systems and schemes of classification. The plants and animals which are of most importance for human civilized life are to be put in the most prominent place; natural objects in the vicinity and their vital connections are first of all to be made known to the pupil. Natural objects themselves, when they can be procured, are to be preferred to illustrations. The instruction in anatomy and physiology of the human body and in hygiene, is, on the one hand, to be given without diffidence, but, on the other, with due regard to feminine sensitiveness. In Physics, a mathematical treatment of the subject is only permissible when there is a natural connection with the teaching of geometry. A special text book for teaching natural science appears unnecessary. If one is used it must be suitable for a girls' school, short and clear, and must avoid all appearances of being a scientific treatise.

Purpose of the Teaching.

The following explanatory paragraphs are taken from pages 280, 281 and 282 of Volume 9 (Education in Germany) of "Special Reports on Educational Subjects" compiled for the British Board of Education in 1902.

It is generally recognised by German educationists that the careful study and observation of Nature, of plant and animal life, not only afford a mental discipline of the utmost value, but are also an important aid in the formation of character. Some training, therefore, in the rudiments of Natural Science forms an indispensable part of the carefully-planned curriculum of a girls' school, care being taken that the symmetry of the curriculum is not disturbed by giving undue prominence to the subject. Natural Science in secondary schools is regarded as a single subject, and must be taught as far as possible as a connected whole, and not sub-divided into separate branches. If sub-division is necessary for the purposes of convenience, the close relations existing between the different branches must never be lost sight of.* These must be taught in connection with each other, so as to train in the pupils the faculty of observing, of describing accurately, and of drawing logical conclusions from observations and experiments.

It being distinctly understood that the Natural Sciences are to be regarded and treated as one subject, the order in which the different parts shall be taught is clearly indicated in the official Prussian programme. The parts, or groups of parts, which are most closely related to each other are taken together or in succession. For example, it is generally agreed that to begin with the study of Botany is most convenient. Specimens are easily accessible, and can not only be seen but handled by the pupils. The study of plant life naturally leads to that of animals, and from thence the transition to the rudiments of human anatomy and physiology is obvious. The laws of health are studied; then follows an introduction to elementary geology and mineralogy, while, incidentally, some knowledge of a few of the most important chemical processes is gained. The course in Physics is strictly 'outline,' and includes study of the more remarkable phenomena, and the laws of its different branches, so far as this can take place without application of mathematics.

In view of the enormously wide range of this subject, very great wisdom must be shown in the choice of what is to be presented to the child. No exhaustive treatment of any branch is aimed at; on the contrary, it is not deemed possible or desirable to gain a thorough knowledge of the principles of any one branch of science while at school. To quote Mr. Russell again: "To understand the relations existing between sciences is worth more than the extensive knowledge of any one."

In the best schools ample provision is made for teaching Natural Science. There are rooms specially built for the purpose, furnished with supplies of expensive apparatus, there are huge cupboards stored with specimens, botanical, zoological, and geological; illustrations, diagrams, charts are found in bewildering number and variety. Rows of benches, each one raised above the other, render it possible for all pupils in the class to follow every stage of the experiments performed by the teacher.

PREPARING BOYS TO STUDY ANY SCIENCE.

The course of study appointed for boys is more comprehensive than that for girls, and fewer limitations are imposed upon the teacher. Some stress is laid upon practical work, and, doubtless, far more is expected of the boys than of the girls. Speaking broadly, though the aim of teaching differs, the methods are much the same. Apart from pedagogical considerations, the teaching of Natural Science to boys has the practical end in view that they may receive such training as will enable them, when they enter the university, to study any science intelligently. But even in their case very little practical work is done in the laboratory while at school. Mr. Russell's remarks upon the comparatively small part played by laboratory work in science teaching in German Boys' Schools, and the reasons for this, are of special interest here. He says: "The presence of splendid laboratories in most German schools shows that the present method of science teaching is a reaction against earlier notions concerning the function of laboratory practice. So long as the aim was to teach the sciences *per se*, laboratory work was necessary for each individual, but with the advent of the idea that the sciences are no more to be considered independent studies than any other subject of the curriculum, and that mental development of the pupil is of more consequence than definite information upon any one subject, class instruction comes to the foreground. Laboratory work is still deemed an exercise of great

*"They are not taught as distinct sciences, but as a means of assisting the individual to a more complete realisation of his surroundings."—J. E. Russell, Ph.D., *German Higher Schools*. Longmans.

value, *but its aim is to facilitate application rather than to promote individual investigation.*" And again, "Laboratory work, if done at all, is introduced so that pupils may duplicate the experiment performed by the teacher, or make other demonstrations putting to practical test the knowledge just acquired. The function of laboratory practice is to make application of facts already learned, not for the purpose of presenting new truths or arriving at new deductions."*

(3) THE PRELIMINARY MATHEMATICAL TRAINING OF TECHNICAL STUDENTS.

Closely related to the teaching of science is the teaching of mathematics to those who intend to enter upon technical courses. A paper on this subject was prepared by Mr. P. Abbott, Head of the Mathematical Department at the Regent Street Polytechnic, London, for presentation to the International Congress of Mathematicians, at Cambridge in 1912. It has been published by the Office of Special Inquiries and Reports of the Board of Education. The following paragraphs are selected from it as being instructive in this connection:—

Previous Training Under Present Conditions.

The majority of day students come to the Technical Institution from secondary schools, while a few come from public schools. In certain provincial colleges, where most of the students come from one or two large secondary schools in the same locality, there is a certain amount of homogeneity in the character of their work, but in general there is more variation, not only in the amount of mathematical knowledge attained, but also in the nature of their training. In a fair number of cases the previous training is satisfactory, especially where the teaching has been on modern lines, but in others the differences are so wide and the deficiences so marked, that some preliminary course within the Institute itself is necessary before a beginning can be made with the technical course proper.

Where faults exist they consist in the main of a lack of accuracy, both in working and thinking, inability to apply knowledge to new problems, hazy notions as to fundamental principles, and a tendency to regard Mathematics as something aloof from the phenomena of every-day life. Their training has frequently been too academic in character; there has been too much stress on manipulation and too little on application. A few specific examples of criticisms which have reached the writer may be quoted:—

"Students admitted are very unequal in mathematical attainments. Arithmetic is generally satisfactory; about one-half can do algebra to quadratics, the other half know little. Perhaps 10 to 15 per cent. have done a little trigonometry."

The great fault which I always have to find is that apparently the students have never, or very rarely, been taught to think for themselves, and are greatly lacking in initiative in solving problems. Far too much reliance is placed on the use of formulae. In the majority of cases also the students have little idea of arranging their calculative work concisely, systematically and clearly.

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CO-OPERATION OF TEACHERS.

In the preliminary training of technical students there are two factors which are essential for ultimate success. One, the co-ordination of the work in Technical Institutions with that of the evening continuation schools, has already been dealt with. The other is almost as important; it is the co-operation of the various classes of teachers who are affected. There are four such classes, elementary teachers, secondary teachers, teachers in evening continuation schools, and technical teachers, and in the opinion of the writer no completely satisfactory solution of the problems involved will be reached until co-operation between these different classes has been secured. It is most desirable that in each locality the technical

*J. E. Russell, Ph.D.: *German Higher Schools.* Longmans.

and secondary teachers should confer on problems affecting the day technical students, while co-operation between technical teachers, evening continuation school teachers, and elementary school teachers is essential if we are to obtain a proper sequence of work for evening students. with a minimum amount of disturbance on transference from one kind of institution to another.

To provide for this co-operation, I would suggest the formation, in each locality, of an advisory committee of studies for Mathematics, composed of representatives of the different classes of teachers concerned. If such committees can be got to work, many misunderstandings will be cleared away, and many of the difficulties in the preliminary training of technical students will be removed.

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(4) NATIONAL EDUCATION ASSOCIATION.

The following are extracts from the Report of the Committee of the National Education Association on "The Place of Industries in Public Education" (1910).

The problem of secondary industrial and technical education calls fundamentally for a clear distinction between elementary and secondary education which shall take account of the significant differences of children in economic resources, and in the interests and aptitudes that appear before the end of the present period of elementary education. Such a distinction points to the end of the sixth year of school as the appropriate beginning of secondary, that is differentiated, education; it does not in any sense contemplate a six-year course as the maximum provision or requirement for any group of children.

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THE SECONDARY SCHOOL FIELD.

The sub-committee was directed to examine the possibilities of technical education in the secondary school field, and to define the functions of technical high schools. This type of school (in the United States) is just now in process of development, and it is difficult to forecast just what its ultimate character is to be. We have the engineering schools of collegiate rank, but we have had until very recently no public schools which provided thorough technical training of secondary grade. There is a great variety of positions coming between the engineer on the one hand and the mechanic on the other.

The special function of the technical high school should be to train men for these positions. The engineering schools have their own functions and do not give the practical training involving the essentials of a variety of trades and industrial processes which foremen, superintendents of shops, and men of that type need. The technical high school can give this practical training, and in addition, all the scientific and literary training which is necessary for such positions. No doubt a large number of foremen and superintendents, designers and manufacturing experts will, in the future, come from the ranks of the mechanics as heretofore, but the majority of such positions are more and more requiring a broader equipment than is afforded in commercial practice.

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Can industrial-arts education of intermediate grade be related to the higher technical training? Many educators feel that no system of education should be allowed to develop blind alleys, and they wish to see the way kept clear for any youth to pass from one school to the next higher. While in many cases this is an impractical demand from the standpoint of vocationxl education, it is by no means impossible to pass youths from intermediate industrial-arts trainina into the higher forms. While they lack something of the technical training, they will have gained on the side of a knowledge of practical conditions. In Germany, it is well known, a large number of the youths who take the intermediate technical training (not that of the engineering level) must have served a period of apprenticeship. Then the chosen ones from among apprentices are admitted to the middle technical schools.

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Definitions of Three Types.

From careful analysis of the existing practices in Secondary, Industrial and Technical schools, and of the needs of this field of education, as evidenced by the testimony and expressions of opinion from a great number of educators, the Committee has formulated the following definitions of three types of schools:

A. *The manual training high school*, or *the manual-training school*, is a school of secondary grade in which a greater or less amount of handwork is included in the curriculum and in which the greater part of the academic instruction is similar to that found in other high school and college-preparatory schools, neither the manual nor the academic instruction being specially planned to be of direct vocational service.

B. The *secondary technical school*, or the *technical high school*, is a school of secondary grade having the distinct purpose of preparing its pupils for industrial leadership, that is, for positions in industrial life requiring skill and technical knowledge and of greater importance and responsibility than those of the skilled mechanics. In such a school the instruction deals not only with the important manual operations, but also with those principles of science and mathematics and their direct application to industrial work that will help to prepare the student for successfully mastering the more fundamental processes and problems of those groups of industries which the school is designed to reach.

The secondary technical school, or technical high school, should have for its main object the preparation of its pupils for efficiency in a large group of important positions in industrial life. Its aim is to cultivate industrial intelligence and those qualities which are essential for efficient industrial leadership rather than abstract reasoning power.

C. *The trade school* and the *preparatory trade school* are schools which have for their definite purpose the preparing of boys or girls for entrance to the skilled mechanical trades, and which deal with their pupils during a briefer course and allow for earlier preparation for practical work than the technical high school. Such schools place their greatest emphasis upon practical handwork instruction under conditions resembling as closely as possible those prevailing in commercial practice. Such schools relate the academic instruction at every point closely to the practical work, and include little that is not of direct bearing on trade work.

SECTION 2: INDUSTRIAL TRAINING AND TECHNICAL EDUCATION OF COLLEGE GRADE.

The Commission found itself unable to make a complete study of Technical Education of University and College grade. It directed its enquiries in this respect almost entirely to a study of the effects of the highest forms of Technical Education upon progress in industry and trade, and did not attempt a thorough examination of the organization of the institutions or their courses of study. In France, Germany, Switzerland and the United States the power and influence of Technical Education of the highest types appeared to be greater than in the United Kingdom or in Canada. In England the opinion most frequently heard—and it was earnestly urged—was to the effect that hereafter the industries must somehow secure the services of more men of the highest scientific attainments with thorough technical training, or her manufacturers and merchants will not be able to hold their own against foreign competition.

The Faculties of Applied Science of Colleges and Universities in Canada have the reputation of preparing engineers for professional work in a thorough and satisfactory manner. From what was learned abroad the opinion appears

to prevail that students in Technical Colleges should have, at some time before they graduate, obtained experience with materials, tools, machines and products for the purpose of giving them a clear understanding of principles, and a correct knowledge of the conditions of production and construction, which prevail in shops and factories. It is not important that they should have enough practice to develop either skill or speed as workmen in manipulative labour.

(1) CO-OPERATIVE COURSES IN THE UNIVERSITY OF CINCINNATI.

A plan has been tried at the University of Cincinnati according to which some students in the Department of Engineering spend week about at the University and in the shops of the city. The plan has been in operation only since 1906, therefore practical results, as they may be discerned in the work of the students after they have graduated, have not yet been determined. So far the working of the plan has been satisfactory to the University authorities, to the employers of the students in the shops and factories, and to the members of the student body themselves.

Plan of Instruction.

The College of Engineering offers two sets of courses, the four-year theoretical courses, similar to those of other Engineering Colleges, and the five-year co-operative courses.

The Co-operative Courses are planned to combine and co-ordinate theory and practice. The theory is taught in the University, and the practice is obtained at the manufacturing plants of the city. Students in these courses work alternate weeks at the University and at commercial shops. The classes are divided into two sections which alternate with each other by weeks, so that when one section is at the University, the other is at the shops. The length of the course is five years, the alternation being carried on eleven months of the year. Each student has a two weeks' vacation during the summer, and a week's vacation at Christmas.

The practical work at the shop is as carefully planned as the theoretical work at the University. In Mechanical, Electrical, and Metallurgical Engineering the students follow, as nearly as possible, the path of the articles manufactured from the raw material to the finished product. In Civil Engineering the students work with structural iron companies, ferro-concrete companies, railroads, and the City Engineer's office.

The entrance requirements for these courses are precisely the same as for the regular four-year course. The theoretical work given at the University is as thorough as the work given in the regular four-year courses. It is given over a period of five years. None of the subjects of the course are abridged and none are omitted.

PLAN OF PRACTICAL WORK.

The practical work is planned to give a thorough course, beginning with the simple labour of actually doing things and going on to and including the more complex advanced work of engineering practice. For example, a young man desiring to become a Railroad Engineer, begins work as a labourer on a track gang; he remains on this until he is competent himself to direct the work of the gang, after which he goes to the bridge-carpenter gang. Following this he is transferred to a bridge shop to learn fabrication. He then goes back to the railroad on ferro-concrete work and switch and signal work. After a short time in the motive-power departments, he finally reaches the engineering department of the railroad. In mechanical engineering, a student goes through much the same apprenticeship as the machinist, with foundry work in addition. In his later years, he also goes into the engineering department. Through a system of co-ordination by special instructors, who visit the shops weekly where the students are at work, the theoretical and practical departments are brought into close connection.

Student apprentices are paid for their work at the prevailing commercial rate paid any other person doing the same class of work. There is a minimum scale of wages, however, beginning at 10 cents per hour and increasing 1 cent per hour every six months.

SHOP WORK

In all cases the Dean of the Engineering College and the Professor of Civil, Electrical, Mechanical, Chemical, or Metallurgical Engineering, as the case may be, confer with the manufacturers in planning the course of shop work, so that the students get a logically and carefully arranged shop training. The work of the shops is co-ordinated with the work of the University by a special set of teachers called Co-ordinators.

The shop co-ordinator is a college graduate acquainted with shop practice. He spends every morning at the University and every afternoon in the shops. His function is to make a direct weekly co-ordination of the work of the shop with the theory of the University. One afternoon, for example, he may be at the shops of a local manufacturing company, where he will observe the student apprentices at work. He will know what they are turning out, their speeds, feeds and cuts, the angle of the tool, how the batch of work is ticketed, how the work is set up, the power drive, everything important in connection with the operation. The next week these young men will be grouped together with their classmates for two periods in class, when he will explain the functions of the particular articles, on which the students were working, in the machine which the local manufacturing company builds. He will take up all questions of speeds, feeds, cuts, accuracy, etc. Figuratively speaking, he will take from the student apprentices the blinders which would restrict their vision except for this explanatory work. The ticketing of the batch of work is gone into,

and the system of routing is explained. Ultimately during the course all problems of shop organization, shop accounting, cost keeping, shop planning, power transmission, heating, lighting, etc., are discussed.

In conjunction with this, a card system is employed by means of which everything the student does in the shop that exemplifies a theory taught in the University, is called in detail to the attention of the teacher of theory, so that when the student comes to that particular theory, the exemplifications which he has had in his practical work in the shop are called to his attention. It will be seen, then, that out of the student's own experience is drawn much material for his course in mechanism, thermodynamics, machine design, strength of materials, shop economics, etc.

A similar system is followed in railroad work, construction work, and in all the other co-operative fields.

Co-operative courses are given in Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Metallurgical Engineering.

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(2) TECHNICAL HIGH SCHOOLS (TECHNICAL COLLEGES) IN GERMANY.

A fairly full report on the character of these institutions is given in the Report on Germany. As already mentioned the Hochschulen, or High Schools, correspond to the highest technical institutions in this country. Dr. Kerschensteiner of Munich puts the case thus:

> It will be advisable to distinguish three groups of schools, according to the grade of training to which they aspire. German industry and trade require, precisely like the German army, a number of intellectually highly-trained officers, a number of well-trained subalterns, and an army of efficient soldiers.
>
> The group of technical officers is almost exclusively recruited from the German technical colleges. These institutions are open only to students who have passed through the 9 classes of the secondary schools. They educate the technical leaders of industry and also the state and municipal officials who are entrusted with the execution of technical problems. They receive their pupils after a school course of 12 or 13 years, including the primary and secondary school, running from the pupil's 6th to his 19th year. Frequently a year of practical work is thrown in between the secondary school and the technical college. These technical colleges supply us for the most part with the higher technical heads of factories, whose duty it is to strike out new paths and discover new tasks and methods.

Mr. Max Wurl in a Paper on "Technical Education in Germany" read before *The North-East Coast Institution of Engineers and Shipbuilders* at Newcastle-upon-Tyne,* presents the objects and nature of the Technical High Schools in this way :

> The aims of the technical high schools are to train the student to independent thought in technical affairs. He is taught to take a wide view in all of his considerations and all his doings, to avoid the mistake of one-sidedness which is but too common. All points, practical, theoretical, commercial, etc., must be studied with equal care and thoroughness; a failure in any undertaking always shows that something has been overlooked or neglected, and on the other hand we may be sure of success, if we include in our considerations *all* the different conditions according to their importance.

*Minutes of Proceedings, Vol. II.

As a preparation for this study the best obtainable general education is considered necessary; only people who have gone through the full nine years' course at a *Gymnasium*, *Real-gymnasium* or *Oberrealschule* and have gained at the end the certificate of maturity by passing that well known, rather severe, *Abiturienten-Examen* are admitted as students. People without that certificate can get permission to study as *Hospitants*, but the fees are higher for them and they are not admitted to any examinations and can of course not take degrees. The newest regulations exclude *Hospitants* who are not in possession of the "one years' service certificate," *i.e.*, have not passed that particular examination after a six years' course at a secondary school.

ORGANIZED IN SECTIONS.

Every student who wants to take degrees must have had at least one year's workshop practice before his first academical examination. This new clause was not introduced until an enquiry had been made as to the readiness of industrial establishments to accept volunteers in their works. 520 engine-works, shipyards, electrical works, ironworks, foundries, bridge building firms, etc. have now agreed, and about 1,750 places are available every year, in addition to those provided by the State for training its railway engineers. For this latter group the regulation is, that the State-Railway Engineer Students work six months in the fitting shop and two months each in the machine shops, foundry and pattern shops; they have to keep an account of their work, and being *Volontàre* receive of course no remuneration.

The object of the workshop practice is not to teach the future student any handicraft as such, but merely to make him acquainted with the materials, tools and working methods, and last, but not the least, with the workmen; the purpose is to give him an idea about the conditions, means and limits of manufacture and workmanship.

FREEDOMS ARE WIDE.

Having passed all these stages of preparatory training the youth will be freely accepted at any German *Hochschule* on account of his certificates and without further examination; entrance examinations do not exist either at the universities or at the *Hochschulen*.

As a student he enjoys an almost perfect freedom; he may take his apartments and use his time as he likes; he is not even compelled to attend the lectures, and no control is exercised by examinations, etc., during the session.

This "Academical Freedom" is considered essential for the individual evolution of the mind. However dangerous it may become sometimes, nobody who has once been a German student and enjoyed the charm of that freedom would ever admit it being in any way curtailed.

This freedom exists in the teaching as well as in learning. The Professors are independent in expressing their thoughts, and only responsible to science itself. Socially they are standing directly under the Minister of Education, who appoints them and often fixes their salary with them privately. The salary consists in a fixed annual sum plus the student's class fees. Besides these ordinary Professors there are generally a number of qualified private teachers (*Privat-Docenten*) lecturing either on the same or on special subjects; they have no fixed salary, but receive as a rule the whole tuition fees paid by their students for their lectures, or at least a part of them.

ONE YEAR OF SHOPWORK REQUIRED.

The instruction at the *Hochschule* is for the first year chiefly general in character; later on specialization into the different branches of engineering takes place. To suit this arrangement the *Hochschule* contains different sections (*Abteilungen*) and every student is entered into one of them. At Charlottenburg for instance there are six sections:—

1. Architecture.
2. Civil Engineering.
3. Mechanical Engineering.
4. Naval Architecture.
5. Chemistry and Metallurgy.
6. General Sciences.

Every student belongs for the first year to Section 6. Although free in his choice, he is recommended to follow a certain course of studies laid down in a programme for the different sections; he may also obtain advice in this direction from the *Abteilungsvorsteher* of that section, a professor detailed for this special duty every year. The method of forming a separate section for the students of the first year, originally copied from the French "*ecole polytechnique*," has become more and more a matter of form; and the programme of study for the first year, *i.e.*, the subjects recommended, are no longer quite uniform for the different branches of engineering.

THREE PARALLEL METHODS.

For the training of the *Hochschulen* three parallel methods are in use; viz.: lectures, practical courses in drawing and designing, and experimental courses in laboratories.

The lectures are held in the usual way; the students make their notes while the professor is speaking and explaining. Some of the lectures are public, *i.e.*, free of charge, while the first three lectures in every subject are as a rule also free in order that students may form an opinon before entering the class. Libraries, models, art collections, etc., give every student an easy opportunity to widen and deepen the knowledge acquired in the lecture rooms; for the same purpose a number of excursions are made every year.

The instruction by lectures has to go hand in hand with the courses of drawing and designing. The latter bear at first a general character and extend, for instance, over ornamental drawing, geometrical drawing, graphical statics, etc. After these, follow more specialized designs, at first of details and later of whole constructions. The rooms provided for drawing and designing are open to the student all day from 8 a.m. to 8 p.m.; he may divide his time as it suits him, but assistance is only given at the particular hours appointed for the courses.

The training itself tends to an individual development of each student; the object is to educate him to self-dependence and self-reliance. The help of the Professor and his assistants is generally confined to suggestions and criticisms concerning the most practicable way of designing, the leading principles for the design and the application of the details; the student is supposed to learn not only what is general practice but also why it is general practice. He must even find his way if his practical experience fails, as for instance when he finds himself confronted with the task of designing an engine of which he has never seen an example in practice.

Similar principles apply to the laboratory courses, which are intended to develop the student's faculties of observation. The great value of laboratories for technical education is fully recognized and much has been done lately for their development, especially for mechanical engineering. Large and well equipped laboratories have been established in several places during the last ten or fifteen years. Formerly we had only laboratories for chemistry, physics and electricity, but at present, kindred institutions are in existence for mechanical engineering, technology, electro-chemistry, metallurgy and other subjects. This variety and specialization is further extended inside of the different laboratories so that each student may train his abilities in any direction which suits his particular taste and inclination.

SOME CONCLUSIONS.

The Commission is of opinion that:—

(1) Secondary Vocational Education should be provided for those persons who are to follow manual industrial occupations, producing occupations such as agriculture, conserving occupations such as housekeeping, and commercial and business occupations;

(2) Such persons should have opportunities for acquiring Secondary Education which would be as fully advantageous to them in their vocations as the Secondary Education provided in the general school system has been advantageous to those who enter the learned professions, other professional occupations, or the leisure class;

(3) Secondary Education for those who have gone to work should be provided in day and evening classes in close correlation with their occupations while they are still learners, as apprentices or otherwise, and also when they have become skilled workmen or journeymen or have come to fill positions as foremen, superintendents or managers:

(4) Technical Education for the preparation of Technical Engineers, and other persons being trained for professional work of a grade and rank similar to theirs, would be improved by further extensions in the directions indi-

cated by the practice in Germany and at the University of Cincinnati. This applies particularly to the education of such men as might become principals and teachers in the Middle Technical Schools and Technical High Schools in Canada. The Commission commends the consideration of this matter to the authorities of the Technical Colleges in the belief that they alone are qualified to render a final decision in regard to it.

The Universities and Colleges are providing technical courses to meet the demands from an increasing number of students. The rapid growth and development of the country, and the further application of science and scientific methods to all forms of production, construction,conservation and administration, will call for still larger numbers of graduates. In consequence the Universities and Colleges are sure to require increased financial support. The Commission is of opinion that this should be provided from some source without causing the fees required from students to be so high as to exclude suitable young persons who may seek the highest grades of technical instruction.

CHAPTER III: MANUAL TRAINING; NATURE STUDY; SCHOOL GARDENING; HOUSEHOLD SCIENCE; VOCATIONAL EDUCATION; INDUSTRIAL TRAINING AND TECHNICAL EDUCATION.

The loose and indefinite way in which writers and speakers use names and terms, to indicate different kinds of education, frequently obscures their meaning and prevents clearness of understanding. Some names are used interchangeably, although they mean different things. One group of these names may be cited as follows:—Educational Handwork, Construction work, Hand and Eye Training, Handwork Instruction, Manual Arts, Sloyd and Manual Training.

Other groups contain such terms as Nature Study, School Gardening, Elementary Agriculture, Agricultural Education and Rural Education; Domestic Science, Household Science, Domestic Occupations, Housekeeping, Practical Arts, Domestic Economy and Home Economics; Commercial Education, etc.; Professional Education, etc.

Still another group includes: Industrial Training, Industrial Education, Technical Training, Technical Education, Technical Instruction, Industrial Arts, Practical Arts and Vocational Education.

The confusion is jumbled worse than ever when various grades of such kinds of education, as are indicated by the foregoing terms, are spoken of as Primary, Elementary, Higher Grade, Supplementary, Superior, Intermediate, Secondary, Middle, High, Higher, Highest.

One can only hope to help a little towards clearness of understanding of what is being done or what is meant by the forms of education which the terms indicate. Orderly thinking, as the first step towards well-ordered organization, is what is aimed at, rather than uniformity in the terms of classification.

SECTION 1: MANUAL TRAINING AN INCLUSIVE TERM.

The following paragraphs are offered as a contribution towards clearing up the question and bringing about a more intelligible usage by educators and others. The terms Educational Handwork, Construction Work, Hand and Eye Training, Handwork Instruction, Manual Arts, Sloyd and Manual Training are dealt with first. The term Manual Training is coming to be regarded as including all the others in this group.

For Development of Pupil's Powers.

All of these terms are used with reference to education whose chief aim is the development of the powers of the pupil for cultural purposes rather than for their application to any particular occupation. Such education looks towards the systematic training of the powers of the pupil into ready co-ordination for accomplishment. It helps to conserve and develop the love of constructive work. It also provides recreation through active physical work which plays, in the education of the pupil, a part somewhat similar to that of organized games and play in life. It is a means of awakening and maintaining the interest of many pupils who are not naturally interested by theoretical and abstract studies when separated from doing something with concrete things.

The forms of activity which are carried on by pupils under these various names satisfy some of the natural instincts "to do." These have been stated as: Sympathetic instincts—to talk and listen and to act in the dramatic sense: Scientific instincts—to know the "Why" of things and to construct things; Æsthetic instincts—to dance and sing and to draw, paint and model. These have also been arranged under the terms of "Communicative," "Dramatic"; "Inquisitive," "Constructive"; "Musical," and "Artistic" instincts.

In the forms of education carried on under the several names already mentioned there is similarity but not identity in the aims of the work. In all cases there is use of material or materials, such as paper, clay, plasticine, wood, cloth, leather, metals, and incidentally pastes, thread, paint, etc., and also training in the use of tools or instruments. The direct object put before the pupil is to "make something." That something may take the form of an exercise in making part of an object, such as a wooden joint, without making a complete article. Under the Sloyd system the exercise is directed to making a complete model known to the child as being useful and, so far as practicable, beautiful.

The "exercises," or "things to be done," or "things to be made," are arranged in order of difficulty according to the age and capacity of the pupils. At the same time they are arranged to give training in handling materials and tools, to impart knowledge of materials and to develop power to turn the thought or concept of the mind into a drawing and, where practicable, from the drawing into a concrete object corresponding to it in form.

Aims and Values of Manual Training.

It is now generally admitted that Manual Training work should have a recognized place in the course of study from the Kindergarten until about the 11th or 12th year of age, for cultural or self-realization purposes. After that the "Manual Training" (the term is used to represent all the others) might be directed more definitely towards discovering aptitudes and tastes and developing skill and ability for some occupation.

The proportion of time devoted to work involving manual activity varies a great deal. No one rule can be adopted with advantage in all schools for all classes of pupils, but the tendency is towards not less than a quarter of the time in school from the Kindergarten up to the age of 12 being devoted to some form of handwork, in correlation with the other studies and subjects.

The arguments which have been used in favour of Manual Training have some resemblance to those which are urged on behalf of Industrial Education. They both plead for a fuller recognition of motive as it appeals to the pupil in school work and a better adaptation of the course of study to the large majority of the pupils in the hope of accomplishing thereby the reduction of the numbers who leave school before the completion of the elementary courses and the development of ability for industrial life.

Manual Training, or Hand and Eye Training, has particular value in the biological function of education. It is a means of developing the sense organs and of training faculties and powers to meet the things and forces of the outer world with intelligent discriminations. Whether this results in an increase of brain power is a question elusive of proof. The evidence, however, is clear that it adds to the happiness of the pupil, causes the knowledge which he acquires to be retained and available for use, and quickens the rate of his progress in other school work.

A recent book, "Handwork Instruction for Boys,"* by Dr. Alwin Pabst, Director of the School for Training Teachers of Handwork, Leipsic, Germany. presents the case for handwork in Elementary Education with such clearness, authority and moderation that selected extracts from it are introduced here. The paragraphs as selected are not continuous in the book as they appear, but they are in the same order of sequence. The headings are inserted by the Commission.

THE REAL SIGNIFICANCE OF HANDWORK.

In reality it concerns not simply a new branch of instruction, but a deep-rooted principle of our whole education system. Therefore something further must be brought out if one is fully to comprehend handwork in its significance for education. The superficial way in which this question is frequently treated in meetings and by the Press can lead to nothing but a war of words, at the end of which neither opponent convinces the other.

Knowledge in itself is not power, but it becomes power in the service of the will and understanding.

Scarcely a phase of intellectual life reflects the national character of a people so clearly as that of education.

Examples drawn from an inexhaustible supply of material may suffice to show the origin of the first tools and their significance in the further development of civilization; at any rate they give us some idea of the truth and meaning of the assertion of Edmund Reitlinger that "the entire history of man, if examined carefully, finally reveals itself in the history of the invention of better tools."

The tool constantly serves the purpose of giving to man a greater mastery over nature and her products. Through the use of mechanical tools this mastery is remarkably increased and strengthened. Even the scientific instruments and apparatus are nothing but improved and refined tools. which are especially constructed to secure for us a more complete knowledge of the natural bodies and the powers of nature than would be possible for us with our senses alone. Just as the ordinary tools assist the hand, so the microscope and the telescope assist the eye, the telephone the ear, and the telegraph makes possible communication at great distance without change of place.

*Translated from the German by Bertha Reed Coffman, A.M.; published by the Manual Arts Press,, Peoria, Illinois.

The improved tool demands a more skilful hand, and in the same measure as the tool of the present differs from that of primitive times, the skill of our hand differs from that of the hand of the primitive man.

Nature has also provided that it should not be possible for a person to receive a wholly one-sided development for a particular service; if a particular service of the eye or hand is required from a person, the entire man must be developed to a certain power of achievement.

REFINEMENT OF THE MUSCLES.

What we call rough work calls into activity the groups of large muscles with their coarser adjustment, while the finer work exercises groups of small muscles with their more delicate adjustment. Therefore, the rougher work develops only a few of the crude motor functions, while the finer work develops the more exact motor functions and requires a finer adaptation of the movements of the muscles. This latter alone is educative, while the hardest kinds of handwork dull the motor perceptions.

If the training is started at the right time, the movements of the muscles can attain a certain stage of perfection which is not possible if begun at a later period in life.

The practical conclusion resulting from these statements of psychological research must be that instruction in handwork should not begin too late. As experience has long taught, it is joined with the play of the children before the school period and in the first school years; and in general it ought to be pursued as the chief thing in the period from the eighth to the sixteenth year. By postponing systematic school exercises for the development of the motor perceptions, the best time is lost and the result becomes thereby questionable.

To be sure we must not fall into the opposite mistake and have the finer exercises, especially those of the fingers, commence too soon. Even here a carefully graded arrangement is indispensable; the universal, methodical maxim, "From the easy to the difficult," when applied particularly to the motor exercises, would be stated: "From the larger to the finer."

And so this line of thought also leads to the statement given above, which might be the central idea of all such discussion, that the entire history of civilization finally reveals itself in the history of the invention of better tools.

HANDWORK AS INTELLECTUAL TRAINING.

It is not possible here to go into detail in these difficult questions, which are not even wholly cleared up by research; but this much is in any case certain, that systematic training and education in dexterity of the hand must be demanded even in the interest of the development of speech. Each individual movement of the hand has its effect on the brain; indeed it must be said plainly that dexterity of the hand does not have its seat in the hand at all, but in the head and brain. Consequently, hand work is without doubt a kind of intellectual training, and the hand is the sixth sense, a way which leads directly to the brain. The customary distinction between "head work" and "handwork" rests upon a fundamental error! There is no kind of handwork which does not require at the same time more or less brain work, and "the man who works energetically and artistically with his hands, as well as the philosopher, must possess a good head." Firmly rooted laziness is inseparably connected with stupidity and dullness.

Handwork arouses the initiative, sets in motion the essential activities of the mind, attention and will, and requires a correct expression of the will. Thus it is an important tool for the development of the intelligence and the permanent retention of knowledge in the brain.

First of all, the play of children is for them serious work. The child is never more industrious than when he plays, and since something definite must be accomplished in the play he learns through play how to work. But an essential difference still remains: play is voluntary, work required; and so through work we learn obedience, the most sterling virtue of children, better than in any other way.

But it is false from a pedagogical point of view to demand of the child only so-called head work, the regular learning of the school. This is, for the first school years especially, a truly bitter food which the child would not take of his own accord. On the other hand, with well directed and selected activities for the hand, he immediately becomes unwearying in his zeal; it is a well-known experience which can be encountered daily in carefully directed courses in handwork, that one finds there scarcely any children who are not industrious, attentive, and willing.

ITS SOCIAL SIGNIFICANCE.

The social significance of instruction in handwork rests especially upon the fact that it gives opportunity for association in work, and for mutual helpfulness and advancement, such as is not permitted in any other branch of instruction. The external relationships themselves give rise to mutual consideration and helpfulness; and besides, it lies in the very nature of productive work

that it leads to association and common interest in work. The social differences are forgotten in zeal for work; each is a friend and helper of his fellow workman.

The entire system lies chiefly in developing independence in the pupils and in giving them practice in perceiving and reflecting. The more sparing of words the teacher of practical work is, the surer will he attain this end; and the more perfectly he has the technique of his work at his command, the greater will be the confidence of his pupils in him.

THE DEVELOPMENT OF THE WILL.

If psychology teaches that the will is a thought brought into execution, then the motor conceptions which excite the muscles to conscious movements are also in a certain sense the raw material out of which the ethical will is formed. Flabby muscles and a weak will can be traced back to the same causes; namely, to a lack of motor activity of the brain. All kinds of physical exercises, gymnastics, and sport, naturally arranged, contribute not simply to develop the muscles, but also to make them subject to the purposes of the will. In this matter instruction in handwork is especially effective. As has already been shown, all finer work is controlled by groups of small muscles, and this limitation also demands accurate control over all the muscles which are not even used in the movement concerned. This power of mastery and the concentration of attention, which is connected with it, form an element which is of the highest significance in the development of the ethical will.

Pestalozzi states that the development of mechanical ability, which is still necessary—in other words, the development of the physical side of artistic training—includes the training of the human senses and the limbs. Their goal is "the highest possible control of the nerves, which gives assurance and perfect control of hand and foot." Both phases of artistic training, the intellectual and the physical, must be carried on together from the cradle up, and in close relation to each other.

Other places in Herbart's works show that he recognizes in physical labour an excellent preparation for systematic activity and at the same time an important means for forming character. He says, "Many a growing boy 'finds himself' sooner at handwork or in business or in agriculture than in school."

A FOUNDATION FOR INDUSTRIAL LIFE.

Among the representatives of the Herbartian school Ziller and Ernst Barth in Leipsic have especially valued instruction in handwork. Ziller sees in it an essential broadening of the general instruction in the preparatory school, and a foundation for the later technical instruction in the trade school or workshop. Consequently instruction in handwork necessarily belongs to the training of pupils who wish to devote themselves later to a practical calling.

Barth shows how instruction in work is to be carried on in the different grades. It is united to the history of civilization and natural philosophy, to geography, geometry, and drawing. From the twelfth year on, but not until then, preparatory instruction for the training for a life work is to be offered in special classes, which is to be adapted to the local conditions and branches of industry.

Professor Biedermann, who through his inquiries into the political life of the middle of the last century, and through his comprehensive studies in the history of civilization, became convinced that there was need of a thorough reform in the German system of education, justified his demand for "education through work" by pointing out, first of all, the drawbacks and disadvantages of purely theoretical instruction. In connection with it he calls attention to the overburdening of the pupils, and especially to the injuries to the health which exist in all kinds of schools as a result of the overloading. In a later chapter, Schule and Leben, (School and Life), he correctly emphasizes the fact that the theoretical knowledge and acquirements gained in the school have in some respects little significance for life; moreover, that the school not infrequently weakens in the pupils the taste for domestic and practical pursuits, and accustoms them to look down with scorn from the height of their imagined wisdom upon the activities of their parents and companions. In order that the school may really be a preparatory school for life, he demands of it the following: along with knowledge and understanding, along with memory and the other powers of receptivity, it must also develop important means of independence, viz.: practical ability, the inclination for construction, keenness of eye, skill of hand, and, above all, will power; in a word, it must not only be a school for teaching and learning in the usual sense of the term, but at the same time a school for work, and must assume its task of educating the pupils for work.

Moreover, the social and economic conditions, which have entirely changed, require the introduction of these activities into the school, because the complete transformation of the entire system of production by the use of machines and the elimination of the most important productive work from the activities of the household and their removal to the factory, have caused the growing child of the present day to lose a great many educative influences, which a few centuries ago were still felt. On that account the education of the school must include these, and thus make reparation for that which is lost. This can only be done by the introduction of practical instruction in the activities of the household and in the problems of the workshop. Wherever

the school offers this kind of instruction, not only as a new course, but as a principle which must penetrate through and embrace all instruction, it is fit for the task which it has, or ought to have, in the social life of the present.

EDUCATION FOR WORK, EDUCATION THROUGH WORK.

That these three tendencies are especially worthy of notice, no proof is needed for him who has in mind, above everything else, the practical results of our education. We are to learn, not for school but for life, and all training should tend to make the person useful for life. For this reason it is necessary to test all aims and means of education in what way they are efficient with reference to the connection between school and life, and with reference to the education of the individual for becoming a member of the social community.

Thus we see a return to the ideas of Friedrich Fröbel, who made self-activity, the development of the creative powers of the child, and joy in work, the main thought of his education. Without doubt further progress will be made along this line, and constantly new systems of instruction and more advanced methods of teaching will be undertaken by means of the application of these principles.

According to our ethical ideas, a commonwealth cannot exist without the work of the individual in the service of the whole, just as a gradual steady development of humanity is not conceivable without serious work, which is performed by the individual within the whole. The higher the culture of a people, the more is work exalted, and it is certainly not a good sign for our German civilization that in our education, training toward a respectful regard for work, especially physical work, is almost wholly lacking. People who are ashamed of handwork do not fully comprehend culture. Education which inspires respect for work and a will for work is a direct means of keeping a high standard of culture, because it compels the wealthy to share with the needy in efforts to obtain culture, and in the distribution of it; and even the commonest labourer who performs the most menial service ought to have the consciousness that he is do ing it for the community as a whole and that by means of that work he is gaining for himself the place to which he is entitled within the whole. "Education for work" and "Education through work" are the two cardinal points around which social pedagogy finally turns.

The introduction of the workshop into the school is the symbol of the changed method of education, which has been developing slowly but surely. Perhaps in a not far distant future the statement will be true: "Only he is truly a teacher who teaches the secret of work."

SECTION 2: NATURE STUDY, SCHOOL GARDENING AND RURAL EDUCATION.

Another group of names or terms is made up of Nature Study, School Gardening, Elementary Agriculture, Agricultural Education and Rural Education.

Nature Study, while often involving some manual activity, is less concerned with training through activities of the body than with giving the pupils an intelligent acquaintance with the phenomena of nature. It holds about the same relation to the terms "agriculture" and "agricultural education" as construction work in the early grades, does to the vocational training of the mechanic.

It is an exercise of the powers of observation and reasoning rather than of the powers of productive manipulation or management. When taken in connection with School Gardening it becomes, in the garden, a form of Manual Training. It appears in every way desirable that Nature Study and School Gardening should occupy a place on the course of study alongside the kind of work which is indicated under the inclusive title of Manual Training. Nature Study and School Gardening are not a substitute for Manual Training; they should be carried on concurrently with it wherever practicable from the eighth to the twelfth year of age. After that they will fittingly pass into courses of vocational education, and will thereafter be more fittingly known under the names of Elementary Agriculture or Agricultural Education.

It appears in every way desirable that Nature Study and School Gardening should occupy a place in the course of study of every rural school and of all town and city schools where ground and facilities can be provided.

School Gardening at the Elementary Schools is a branch of Nature Study with a form of Manual Training, and not a technical training for the industry. At the same time it aims at producing results in plants, flowers, seeds, etc., which are in themselves of economic value. The educational value of the processes is increased by the keen interest of the pupils in preparing for and taking care of living things which are all their very own. In Circular 746, "Suggestions for the Teaching of Gardening," issued by the Board of Education of England, the question is presented with much clearness. The following extracts are taken from that paper.

School Gardening in England.

The Practical First.

3. School gardening, therefore, rightly understood, is a branch of "Nature Study" rather than a professional training for an industry. But it is also—and this is what makes it particularly suitable for the education of children—a study which aims at producing visible and tangible results, which appeals to their practical and utilitarian instincts, and is closely connected with their domestic life. It is, or should be, thoroughly "practical," and the theoretical part of the instruction should be directly related and, indeed, subordinated to the practical.

Nature Study and the Garden.

4. It is certainly not the purpose of this memorandum to underrate the value and importance of "Nature Study" in town schools or in country schools where the circumstances are unfavourable to the establishment of school gardens. There can, however, be no doubt that even in town schools the interest of Nature Study is greatly increased if it is illustrated by cultivation of plants on such a scale as is possible, and that the further development of Nature Study into gardening reacts most favourably on Nature Study itself and supplies it with a meaning and interest the value of which can hardly be exaggerated. Where this particular development is impossible, such other means as are available must be used to guard against the chief danger which affects Nature Study, viz., its tendency to fall back into a series of disconnected object lessons which, on the one hand, make no particular appeal to the interest of the child, and, on the other, lead to no understanding of general principles.

Useful for Experiment.

5. In one respect gardening has a great advantage over some other studies in that it lends itself very readily to experiment on the part of both teacher and scholar. Mistakes and failures in gardening are often more educative than successes, and though, where separate plots are cultivated by individual scholars or pairs of scholars, it is desirable to guard against the discouragement arising from wholesale failure, it is equally desirable to cultivate a sense of responsibility in the scholars by allowing them to realize the consequences of bad or slovenly methods, such as sowing too thickly, insufficient thinning or weeding, or neglect to act promptly when the onion or carrot fly appears. In this, as in all other subjects of instruction, the teacher has to keep to a just mean between doing too much and too little for the scholars.

Correlations.

6. As has already been indicated, gardening affords one of the best means of making the ordinary school work more concrete and more interesting. All education involves effort on the part of the scholar, and, even in favourable circumstances, some drudgery is inevitable, the discipline of which is wholesome. Drudgery, however, always involves waste of energy, and if we can set before the scholar an object of practical interest, the pursuit of which demands at the same time a high degree of accuracy and thoroughness, we reduce this waste of energy and make his education more profitable as well as more pleasant. The practical interest of the school garden can be used to give reality to all the ordinary class subjects, such as reading, writing, arithmetic, and composition.

Interests Parents and Ratepayers.

It is quite permissible for those who believe in the value of education, apart from results, to emphasize the utilitarian aspect of gardening. In the country as in the towns it is difficult to exaggerate the importance of enlisting the sympathy of parents, and of ratepayers who are

not parents, with the work of the elementary schools. Gardening is, perhaps, the most important domestic industry of this country; it is in close touch with the kitchen on the one hand and with agriculture on the other. The handy and resourceful workman, whether on the farm, or in the workshop, is usually a good gardener, and the keen competition at village flower shows extends to all classes. There is therefore in the rural community a large stock of sympathy and interest to draw upon, and interest of a kind which will tend to protect school gardens against the danger of dilettantism. The suggestions of the practical rural economist are indeed very likely to enlarge the education influences of the school garden.

Requires Competent Teacher.

10. Instruction in gardening should, wherever such an arrangement is at all possible, be given by a member of the ordinary school staff. It is, of course, very desirable that the teacher should take every opportunity of improving his qualifications by attending such courses of instruction as are available, and he will naturally welcome any help which the Local Education Authority's organizer or superintendent or visiting instructor in horticulture may be able to give. But the importance of maintaining an intimate and reciprocal relation between the garden work and the ordinary school work is so great that the employment of the ordinary teacher, with his personal knowledge of the scholars and of school methods, is usually preferable to the employment of a highly trained or professional visiting instructor, even if, from a technical point of view, there is some loss of efficiency. And from a purely practical point of view the ordinary teacher has the great advantage of being able to alter his time-table to suit the weather.

On the other hand, where there is no teacher in the school who is competent to give reasonably effective instruction in gardening, it will be necessary to secure the services of a competent visiting instructor if gardening is to be attempted, though the ordinary teacher should always attend the instruction both as a learner and with a view to keeping up the connection with the ordinary school work. Where this outside assistance is not available, and where there is no teacher in the school who takes an intelligent interest in gardening, it should not be attempted at all. Perfunctory and insincere work in the garden is mischievous both to teacher and scholar, and discredits the whole movement towards practical education.

School Gardening in Ontario.

Ontario has a Director of Elementary Agricultural Education, with his headquarters at the Ontario Agricultural College, Guelph, Ont. From time to time excellent circulars and bulletins regarding School Gardens and pupils' work in them are published by the Department of Education in co-operation with the Department of Agriculture and the Schools Division of the Ontario Experimental Union.

The Experimental Union, as it is usually called, was formed in 1879 for the purpose of encouraging the scientific study of farm crops and farm operations amongst the students of the Ontario Agricultural College.

While actual membership has been restricted to students, ex-students and teachers of the College, it offers everyone the opportunity of taking part in its co-operative experiments. Up to the end of 1911 over 70,000 experiments were carried on by its members and associates in the Province of Ontario in different lines of work relating to Agriculture—Farm Crops, Fertilizers, Poultry, Fruits, Vegetables, and Forestry. This has helped very much in advancing the chief industry of the Province.

A Schools Division of this Union was organized in 1909. It aims to adapt the work of the Union to the needs of the schools, giving to boys and girls a training in careful work and observation, so that when they are older they may take up some of the larger experiments or solve for themselves the problems that will arise in their daily work.

To be a good member of the Union implies:—

1. That you will learn to look forward and plan your work.
2. That you will follow instructions carefully.
3. That you will do your work well and not neglect it.
4. That you will observe closely what is happening to the plants in your garden; that every day you will learn a little more and become a little wiser and a little more patient.
5. That you will grow the very best flowers and the very best vegetables that can be grown in your garden, and the very best grain in your experimental plots, and that you will not be satisfied with anything but the best.
6. That you will be interested in your schoolmate's efforts, ready to help him and ready to acknowledge his helpfulness to you.

The circulars of the Department of Education are appropriately illustrated. One deals with the general subject of Children's Gardening under such headings as:—

How to keep your Garden Journal;
Garden Tools and their Care;
What to grow and how to procure Seed;
Locating and laying out a Garden at Home;
Preparation of the Soil;
Planning the Plot and planting the Seed;
Protecting Seedlings;
Mulching, Watering and Cultivating;
Thinning and Transplanting:
Picking Flowers;
Gathering Seed; growing Bulbs;
Garden Rubbish, etc.

Circulars are also issued giving detailed information on the work of a school experiment, with a particular plant or crop. Under the subsidiary *Cultural Directions*, useful suggestions and directions are offered in regard to: Time of Planting; Soil and Manuring; Sowing; Cultivating; Weeding; Thinning; Harvesting; Storing; Estimate of Yield; Using; Reporting.

Other circulars contain the requisite information on the carrying on of simple experiments with cereals, and are accompanied by charts which illustrate some of the experimental work at the Agricultural College. Another chart with its supplementary circular contains just the information boys and girls in rural districts should have on Alfalfa or Lucerne, with the offer of seed to sow a small plot and directions how to care for the crop.

SECTION 3: HOUSEHOLD SCIENCE.

A third group of educational names, to be dealt with briefly, includes Household Science, Domestic Science, Domestic Occupations, Household Arts, Housekeeping, Domestic Economy and Home Economics.

Domestic Science and Household Science in their elementary forms shade into Nature Study and Manual Training, and have close relation to them. It would be well if, until the 11th year of age, they were not used in connection with pupils' work as indicating anything different from or other than Nature Study

and Manual Training. The terms Household Science, Domestic Science, Household Arts, Housekeeping and Domestic Occupations would then indicate the forms of education to be given for vocational purposes after the girls were 11 or 12 years of age. Sewing before 11 or 12 years of age finds its appropriate place as a division of Manual Training.

The terms Domestic Economy and Home Economics have been used to include the whole range of educational work for home-making and housekeeping occupations.

SECTION 4: VOCATIONAL EDUCATION, INDUSTRIAL TRAINING AND TECHNICAL EDUCATION.

Vocational Education is the term which has come into frequent use during recent years to indicate the form of education which purposely provides definite training and definite knowledge expected to be useful in enabling an individual to carry on his vocation in a way most advantageous to the community and satisfactory to himself. Vocational Education has been classified for convenience of explanation under six headings, each one designating the group of vocations included under it, such as professional, industrial, agricultural, commercial, marine, and housekeeping. Industrial Training and Technical Education is another way of designating the same thing as Vocational Education for all except part of the professional group, such as Lawyers, Doctors, Clergymen, etc.

In some quarters a narrower interpretation has been given to Industrial Training and Technical Education, and confined it to such instruction and training as have a bearing directly and chiefly on knowledge and ability with materials, tools, machines, manipulations, processes and products. However in all the countries visited by the Commission systems and methods of Industrial Training and Technical Education provided by public authorities include also instruction in Language, Arithmetic, Science, History, Literature, usually Physical Culture and Civics or good citizenship, and not infrequently Singing.

Vocational Education is older than any form of liberal education. Men have always followed occupations, requiring more or less skill and intelligence, by which they could secure a livelihood; and they have always trained the young for these occupations. The reason given for the enlargement of the field of the public school is that the changed conditions of industry, and of living in towns and cities, have withdrawn from children opportunities which were formerly theirs of participating in housekeeping and industrial work in such a way that they were prepared to go on with it after their school days were over. The school was really organized to supplement, by the arts of reading, writing, arithmetic and drawing, what the participation in the work and life of the home and occupations of the parents did provide. The changing conceptions of education are due not wholly to the existence of new or different needs on the part of the people. Formerly the training of the home, of the occupation, of the community and its various institutions, was only supplemented by the education of the school. Now the school is absorbing the whole time of the child, while the changed

conditions of industry and living have withdrawn the old opportunities. Where and while this is the case, the school becomes the only agency available to provide the new supplementary training for the all-round equipment of young people for occupations and citizenship. It must be made competent and adequate.

Changing Views of Educators

The change which has come over the views of the leading educational authorities, as to what may be expected from the school, is set forth in very many reports and books of recent years. Extracts are given from the book, "The Problem of Vocational Education" by Mr. David Snedden, Commissioner of Education for the State of Massachusetts; from "Beginnings in Industrial Education," by Mr. Paul H. Hanus; and from the report of The National Society for the Promotion of Industrial Education.

"THE PROBLEM OF VOCATIONAL EDUCATION," BY DAVID SNEDDEN, PH.D.,

The Relation of Vocational Education to Manual Training.

In modern educational doctrine, MANUAL TRAINING occupies an intermediate field between VOCATIONAL and liberal education. In the minds of many, who were originally influential in introducing drawing, manual training, household arts, and mechanical arts, these studies were designed to contribute to vocational efficiency. By school-masters and educational administrators, their contributions to liberal education have been constantly exalted, and these subjects have been largely divested of vocational significance.

Few will doubt that a wide range of contact with tools and the materials to which tools are applied, as found in the hand-work, bench-work, gardening, cooking, and in the machine-shop work of the modern schools, is exceedingly desirable. It is a fact, however, that the MANUAL TRAINING so given is rarely controlled by the motive of vocational training, and that it rarely results in any recognizable form of vocational efficiency. In its contributions to VOCATIONAL EDUCATION, it is more nearly comparable with the development which results from play and other forms of spontaneous experience-getting.

The MECHANIC ARTS and technical high schools, which were originally expected to train the higher ranks of factory and trade-workers, have generally failed to achieve this end. These magnificent schools have been sought in increasing numbers by youths so situated as to be capable of an extended liberal education.

The spirit of approach has been that of the amateur, or dilettante, rather than of the person interested in attaining vocational fitness. Only slowly has the work been removed from the field of amateurish effort.

Furthermore, a generous course in MANUAL TRAINING actively followed provides a variety of suggestions for subsequent choice of a vocation. Through it, many boys will discover a bent, or capacity, along which a VOCATIONAL EDUCATION may be carried out.

If we assume that little distinctively vocational education will be found in the elementary schools, we may also assume that many pupils will be allowed even greater opportunities than are now available for the development of their capacities in the field of the INDUSTRIAL ARTS, studied mainly from the point of view of gaining variety and range of experience, and a basis for the subsequent selection of vocational activities.

Here again, as in the last section, it must be asserted that MANUAL TRAINING and VOCATIONAL EDUCATION should be controlled by different purposes to a considerable degree, though each contributes measurably to the purposes of the other.

VOCATIONAL EDUCATION must be carried on, as far as possible, under the conditions of a workshop. MANUAL TRAINING, as a part of liberal education, must not divorce itself from contemporary life; but, on the other hand, it must be approached from the standpoint of the breadth and interest inherent in the true instrumentalities of liberal education.

SESSIONAL PAPER No. 191d

"BEGINNINGS IN INDUSTRIAL EDUCATION," BY PAUL H. HANUS.

It seems worth while to indicate in a few sentences the difference between MANUAL TRAINING and INDUSTRIAL TRAINING. Manual training is a means of general education just as history or chemistry or language is a means of general education. It has materials of its own and a method of its own, and hence the result is a peculiar kind of knowledge and power due to the nature of the subject and the method that it demands.

It is, however, as now carried on, usually much too general to be comparable to industrial training. MANUAL TRAINING abstracts the principles of all trades and teaches them. It ought to make a pupil generally "handy." It is, if properly carried on, an excellent preparation for industrial training. INDUSTRIAL TRAINING goes further. Besides teaching all the processes of a given trade from the first attack on the raw material to the last touches on the finished product, it teaches the theoretical foundations of that trade. Hence it gives the worker a TECHNICAL KNOWLEDGE of his trade, and begins the development of skill in the practice of it. It must not be inferred, however, from what has just been said, that an industrial school can turn out a journeyman. The skill of the journeyman can be developed fully only in the factory.

In the industrial school everything has its specific application. Therein lies its value and its significance. In training for a trade or in the pursuit of that trade itself, there is constant opportunity for the application of all that the pupil has learned, and hence the possibility of of progressive growth in thinking about his calling and in his command over it, not only in the processes of the trade, but in all that the trade means.

THE NATIONAL SOCIETY FOR THE PROMOTION OF INDUSTRIAL EDUCATION.

As reported by Mr. Charles R. Richards, with whom the Commission had the advantage of conversations and discussion on the subject, the National Society for the Promotion of Industrial Education, at its annual convention in Boston, 1910, considered the question of nomenclature used in discussions on Industrial Education. The Executive Committee of the Society formulated a brief presentation of desirable terminology, involving some important distinctions; and this terminology which has been adopted by the Committee is as follows:—

Vocational Education includes all forms of specialized education, the controlling purposes of which are to fit for useful occupations.

Vocational Schools in a broad sense include all commercial, agricultural, industrial, household arts, and professional schools with the above purposes.

Industrial Education denotes the field of vocational education designed to meet the needs of the manual worker in the trades and industries, including the occupations of girls and women carried on in workshops.

Agricultural Education is that form of vocational education which fits for the occupations connected with the tillage of the soil, the care of domestic animals, forestry, and other useful work on the farm.

Household Arts Education is that form of vocational education which fits for occupations connected with the household.

Manual Training is the training of the hand, especially by means of the tools which are used in various industrial processes, employed as an agent in general education.

Manual Training High Schools (Mechanic Arts Schools, sometimes called Technical High Schools)—Manual Training had its beginning 30 years ago in secondary schools with four distinct avowed objects in view: (1) To educate the whole boy, to develop the entire area of his brain; (2) to lay a broad and appropriate foundation for higher education; (3) to enable a boy to discover his innate mental and physical aptitudes; (4) to furnish a broad basis for an industrial career should one's aptitude lie in the direction of the mechanical arts. It admitted only boys of 14 years or more who had finished the Grammar grades—the average was about 15.

Manual training high schools are defined in the report of the Committee on the Place of Industries in Public Education made to the National Education Association in 1910, as follows:

"The manual training high school, or the manual training school, is a school of secondary grade in which a greater or less amount of hand-work is included in the curriculum, and in which the greater part of the academic instruction is similar to that found in other high schools and college preparatory schools, neither the manual nor the academic instruction being especially planned to be of direct vocational service."

It is evident that manual training schools as represented by the above definitions are not vocational schools as previously defined.

Industrial Schools include all special schools (a) that prepare for entrance into industrial employment and (b) schools that give supplementary instruction to those already engaged in such employment.

Trade Preparatory Schools (General Industrial Schools, Intermediate Industrial Schools, Pre-apprenticeship schools)—Trade preparatory schools are schools that offer training for boys and girls between 14 and 16 years of age in practical industrial processes, including such drawing, science and mathematics as will prepare them for entrance into the trades or industries as efficient beginners.

Trade Schools are schools that afford specialized practical training in manual trades with the object of preparing for immediate practical work at the trade as a wage earner. Such schools aim to take the place of apprenticeship in whole or in part.

Technical Schools are schools giving training in practical industrial processes, and which at the same time offer advanced instruction in the scientific and mathematical principles upon which these processes are based.

Technical High Schools are public schools of secondary grade having the distinct purpose of preparing pupils for industrial careers requiring scientific and technical knowledge beyond that needed by the skilled mechanic.

Continuation Schools—1. Evening Continuation Schools.—Evening Continuation Schools are schools attended by those already engaged in useful employment which provide instruction directly related to such employment. Such instruction may consist of either practical work, or related subjects of study, or both.

2. Part-Time Schools or Day Continuation Schools.—Part-Time or Day Continuation Schools are schools for persons (commonly apprentices or other learners) engaged in useful employment, which give instruction supplementary to such employment during a portion of the working time of the pupils.

Co-operative Schools are schools conducted under an agreement between the school and an employing establishment, by which students entered in schools are given opportunities for practical work in the establishment for a portion of their time.

English and Canadian Opinion.

The English Education Act of 1899 contains the legal definition of technical instruction for the purposes of that Act and for the application of public money under it:

"Technical instruction" "shall mean instruction in the principles of science and art applicable to industries, and in the application of special branches of science and art to specific industries or employments. It shall not include teaching the practice of any trade or industry or employment."

In a communication furnished to the Commission by Dr. W. L. Goodwin, Director of the School of Mining, at Kingston, Ont., he states:

"Technical Education may be defined as a course in the principles and applications of the sciences with the purpose of preparing men and women for professions and occupations requiring trained intelligence, skilful manipulation, and more than the usual store of information.

"Industrial Training may be defined as the actual teaching of skilled labor, as formerly done by the apprenticeship system, but now in the more advanced countries, as in France, Germany, Switzerland, etc., carried on in schools where there is an opportunity of teaching more than the mere showing how a thing is done.

"But Technical Education and Industrial Training shade into one another. In fact a completely organized system of Technical or Industrial Education provides for every grade of worker from the engineer who plans and directs to the skilled labourer who uses his hands and head, rather than his head alone. Such a system should be so constructed as to provide from the beginning for

the advancement of the likeliest youths through the lower schools and their diversion at certain points to the schools and courses leading to the higher and the highest kind of technical education. On the other hand the pupils whose ability is seen to be more mechanical should be turned towards the industrial training schools. This is the ideal towards which we must intelligently work."

Dr. John Seath, in his report on *Education for Industrial Purposes*, says:—

The term Industrial Education is applied, in its limited sense, to general courses which prepare for any trade, as well as the special courses which prepare for individual trades. In many countries it includes, also, the education of those engaged in transportation. It deals with both theory and practice; but in all the schools that provide it, especially in the Trade Schools, the emphasis is on the practice. Locally, it should be added, the term has a still more limited meaning, being applied to the courses in those schools in which are trained, for various manual occupations, the waifs and strays from the elementary schools.

The term Technical Education is applied, in its limited sense, to the courses provided for those who are designed for the higher directive positions in connection with the industries; that is, the courses for overseers and superintendents, as well as for students of the technological schools and the university departments of Applied Science. Here, however, the emphasis is on the theory, and machinery and other apparatus are generally used only to establish the connection between the theory and the practice. Quite mistakenly in Ontario the term Technical has been applied to the cultural and practical courses in Manual Training and Household Science. With greater appropriateness, however, it is applied to both Industrial and Technical Education, as defined above. Accordingly, when in this report the context makes the meaning clear, I will use each of the terms in its more limited sense, and the term Technical to include both.

General Conclusion.

The examination of many explanations, besides those already quoted, and the current usage of the terms support Dr. Goodwin's statement that Technical Education and Industrial Training shade into one another, The most, and perhaps the best, that can be said is that, where the emphasis is laid upon the development of ability and skill in the handling of materials, tools, machines and products, the training or education may fittingly be called "Industrial"; and where the attention is given chiefly to science and calculations, and emphasis is laid upon the acquisition of knowledge of principles and their applications, the training or education may be called "Technical." No dividing line can be used to mark the one from the other. The experiences of an education which is mainly "Industrial" are a means towards the accomplishment of the object of the education which is "Technical." Each, in some measure in its processes, includes part of the other. On the industrial side progress in knowledge of qualities and principles comes from doing; and on the technical side some progress towards industrial skill and ability results from the processes of acquiring knowledge of qualities, theories, principles and calculations.

SECTION 5: THE MACDONALD FUNDS.

Funds were provided by Sir William C. Macdonald, of Montreal, to promote Manual Training, Seed Grain Selection, School Gardens, Nature Study and Household Science as parts of a movement to assist in building up the country

in its boys and girls. The story of that Movement is found in the Report of an Address before the National Education Association of the United States for 1909. In view of the great extensions and improvements in Canada of what was aided in the beginnings by the Macdonald Funds, the statement is presented here. This is done in order that provincial and local authorities may have the facts before them when considering the best way to use any grants which may be obtained from Dominion or other sources to promote Drawing, Nature Study, Experimental Science, Manual Training and Household Science.

Object of the Movement.

The Macdonald movement, as helped by Sir William C. Macdonald, has nothing destructive in it. It does not desire to destroy anything that now exists in rural districts, except weeds, but it hopes to help in building up something better than is now known and done, and thereby displace what is poor. It aims at helping the rural population to understand better what education is and what it aims at for them and their children. It plans to help in providing more competent leaders for the horticultural and agricultural population. Somebody's watchfulness, somebody's thoughtfulness, and somebody's thoroughness, are always required; and the progress of the people in all worthy ways can be increased in what might be called geometric ratio through intelligent leaders who possess and use such qualities with unselfish public spirit.

In 1898-99, in fact before that, Sir William C. Macdonald had been most anxious to help to improve rural schools in Canada, and he sought help in the way of plan-making and administration. It appeared that the first thing to do was to give object-lessons of Manual Training in the elementary schools of cities and towns so as to educate public opinion in favor of better methods of education in places where newspapers were published and to which the country people looked for guidance.

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The man in the rural district imitates the man who lives in town. The man who lives in town has the best chance of being a leader; and the man in the country would not be willing to take a lower grade of education for his boy than a town or city man. It was important to get the leaders from the city to recognize improvement by means of practical education. This was the reason for the Macdonald Manual Training Fund and its work. Manual Training was the first step in this plan. The rural school was not an after-thought; it did not come out of the Manual-Training Movement. The Manual-Training Movement was a step toward the other end—that of improving the rural schools. Hitherto the wealth and wisdom of the country have been given to town schools. The little rural school has been left without help.

Manual Training Centres.

Sir William C. Macdonald furnished funds to establish Manual-Training Centres in connection with the public schools in twenty-one places, from Prince Edward Island to British Columbia, and to maintain them without cost to the pupils or the public for a period, in most cases, of three years. At first special teachers of ability and experience were brought in from outside, mostly from England. Some twenty-seven Manual-Training teachers were thus brought into Canada. As time went on Canadian teachers were trained and became duly qualified. Before the end of the period of maintenance by the Macdonald Fund, there were forty-five Manual-Training teachers on the salary roll at a cost of some $3,600 per month, and more than 7,000 boys were taking the courses. Summer courses were provided for teachers of urban and rural schools. In the cities on Saturday forenoons, or at some other convenient time every week, classes were arranged for the teachers from whose rooms the boys went to the Manual-Training-Centres. In Ottawa these classes were attended by over ninety teachers, and in Montreal and in Toronto by over a hundred in each place. In 1903 (in Montreal in 1904) the local authorities in the several provinces took over and extended the work. The equipment was presented free to the school boards, and in the case of the Normal Schools to the Provincial Governments. In 1909 over 20.000 boys and girls in Canadian schools received the benefits of Manual Training in their regular course under the school authorities as a result of Sir William's benefaction in giving that form of industrial and agricultural education a good friendly lift.

Seed Grain Prizes.

Out of the Macdonald Manual Training Fund came the Macdonald Seed Grain Competition carried on by boys on farms dotted all over Canada from the Atlantic to the Pacific. The main purpose of this movement was to improve the crops of Canada by encouraging the general use of seed improved by selection from varieties the product of which is in demand or has a relatively high market value. The use of such seed increases the quantity of produce per acre; makes the quality better, and thus renders rural occupations more profitable and the people who follow them more prosperous and more contented. Here was a great chance to do some educational work in progressive agriculture; to do something interesting, something attractive, something definite, something beneficial to the whole c mmunity, s mething easy and yet with plenty of difficulties. Farmers and their families may fail to appreciate the educational advantages of a plan or scheme set out in a written statement, but here was something which would be so helpful and instructive to boys and girls that they would go on with it, and the habits of observation and thought and study would remain with them. $10,000 for prizes would set and keep this going for three years. Sir William Macdonald provided the money with all goodwill as prizes to boys and girls to encourage them to carry out in practice the plan of selecting the largest heads of the most vigorous plants and growing seed from those heads on a plot by itself.

The yields from the crops of 1903 compared with those of 1900, on an average for all Canada for spring wheat, showed an increase of 18 per cent. in the number of grains per hundred heads, and 28 per cent. of increase in the weight of grains per hundred heads. In oats the figures were 19 per cent. of increase in the number of grains per hundred heads, and 27 per cent. of increase in the weight of grains per hundred heads. These were results from several hundred seed grain plots operated by boys and girls. Altogether over 1,500 entries were received. Out of that number 800 completed in full the first year's work, and 450 of them completed the three years' work in a satisfactory manner.

Canadian Seed Growers' Association.

Many of the farmers on whose farms the competition was carried on were formed into the Macdonald-Robertson Seed Growers' Association, out of which grew the Canadian Seed Growers' Association. Its annual reports contain a marvelous record of valuable public service. Leading members of the association have reported several distinct and definite gains from the method of selection which had been followed by the members of the association, namely: the size and quality of the kernels definitely improved; the strains of selected seed maturing more evenly; the strains becoming better adapted to local conditions; varieties being kept pure; the strains becoming more resistant to disease, and gaining in productiveness. All these features are highly desirable, and give added value to the crops in every case.

School Gardens.

Under the Macdonald Rural Schools Fund, arrangements were made for providing a school garden at each of five rural schools in each of five Provinces. A trained instructor was placed in charge of each group of five gardens and of the Nature-Study work at them. He spent one day at one school and at the others in turn. The cost of this was met by Sir William Macdonald.

At the School Gardens an effort was made to give the children information and training in three important matters in connection with agriculture: the selection of seed; the rotation of crops; and the protection of crops against weeds, disease, and insects. This is really Industrial Education. Children find ou something by doing, observing, and recording the results themselves. All worthy p ogress, in matters that are worth thinking about, springs from learning the lesson of consequences—the application of the principles of cause and effect. As soon as a child understands that, and governs his life accordingly, he becomes a better pupil and the promise of a better citizen in every sen e.

The School Garden is one way of making rural life more popular as well as efficient. It may be the first step toward inducing the people to pay more to make the schools more efficient. The best education in rural schools should make the people love rural life, and also enable them to make it more profitable. The best way to make any workman like his work is to make him understand it. The beginnings of all that and much more are laid in the schools.

In the largest school, two hours' work per week by the pupils was found requisite to keep the gardens in proper condition. In one school the enthusiasm was so great that the pupils did all their garden work outside the regular school hours. At this school, also, the garden did not suffer from neglect in the slightest degree during the midsummer vacation of six weeks. Experience indicates that when the gardens are fully organized the plots can be well kept by devoting two half-hours per week to the work. This time is mentioned, not as the ideal condition, but as an encouragement to those who may desire to start School Gardens in districts where prejudices are likely to be met. The fact is that in the ordinary ungraded school, and for that matter in the urban school as well, the working power of the pupils is ill-sustained throughout the day owing to their merely forced interest in much of the prescribed work. An awakening as to the educational waste of our schools is coming, and when the School Garden is seen in its true relation, it will have a period in each day of the school program during the growing season. The children have ample time to spare, and the work of the gardens is promoting their intelligence and progress in the ordinary school course.

The following extracts are from letters and reports received from teachers in charge of School Gardens, Carleton County, Ontario:—

The School Garden seems to fill in the weak parts of our education for the growing child, as it tends to the molding and developing of his character. I know that the general discipline in my room has been helped by the garden work, and also that the pupils like their work in the schoolroom better on account of it. If our politicians would try teaching school with a garden and then without one for two years, as I have done, I am certain that they would be willing to grant all the financial support required; yes, probably be too liberal with it.

(Miss) M. York
Richmond Public School

My pupils are more observant than they were before we started School Garden work, and seem to acquire a clearer understanding of all their work. Mr. A——— told me that the School Garden had been a benefit to his boys, and that they were more independent in their work both in school and out of school.

W. Pettapiece
Principal North Gower Public School.

I am ready to put myself on record as saying that the School Garden has relieved much of the drudgery of the school work to which I was always accustomed. This year we had our School Garden, and it has been the pleasantest year of my school work. I would never again pass a summer without a School Garden. I consider that the chief value of the School Garden lies in the effect which it produces on the moral tone of the school. The juvenile sense of ownership is the greatest insurance on the success of the garden, and incidentally on the care of the whole school property. The garden is the central point of interest for this end of the township, and it is not unusual to have as many as a hundred visitors at the garden on one Sunday afternoon. I have noticed that the cultivation of flowers has received more attention in the homes since the advent of the School Garden, and I am often consulted about this work. I have not heard any unfavorable opinion expressed by responsible persons in this community, but on the other hand the most progressive men have spoken highly of the garden work.

B. A. Howes

Macdonald Consolidated School, Guelph
(Late of Bowesville Public School).

It is impossible to overestimate the value of School Gardening on our boys and girls. Instead of being detrimental (as at first supposed) to their advancement in the other branches of learning, it has had the opposite effect. Since engaging in the work my boys and girls have been first in all examinations, competing with children from other schools, including city schools. The whole tone of the school has been improved morally, socially, and esthetically. Our boys and

girls have now a reverence for life unknown before, and it has awakened in them, as nothing else could do, a deeper interest in all life around them. It has helped to make school life a pleasure. Now the boy makes the excuse to get to come to school instead of the excuse to remain at home. It has aroused the interest of the entire community. The parents take a pride in "the work of our boys and girls in the School Gardens," and never fail to bring visitors to see the work that is being done there. The pupils learn practical gardening, and already their advice and assistance are often sought by parents and others interested in the cultivation of plants. Its influence is seen also in the plots and flower borders outside. Our school board has come to realize the value of this work and are anxious to have it continued.

G. A. Moore
Principal Carp Public School.

Consolidated Rural Schools.

Four object-lesson Consolidated Rural Schools were provided by the Macdonald Rural School Fund—one in each of the four Provinces of Ontario, New Brunswick, Nova Scotia, and Prince Edward Island.

They were located at places chosen or approved by the Provincial Departments of Education. In each case a new building was erected to take the place of the small schools which at that time were serving the single sections proposed to be consolidated. They were each equipped with ordinary classrooms and an assembly hall, and also for Manual Training, Household Science, and Nature Study with a School Garden.

A Consolidated School Board was elected according to the school law of the Province concerned. The school in Nova Scotia was opened in September 1903; in New Brunswick, September, 1904; in Ontario, November, 1904; and in Prince Edward Island, early in the summer of 1905.

The Macdonald Rural School Fund met for a period of three years the additional expense of the Consolidated School over the cost of the small rural schools which formerly served the locality. The school sections contributed exactly the amount of the former expenditure, and the extra cost was met by the Macdonald fund for three years to enable the people of four provinces to have these object-lessons and experiments in education.

The educational results from these schools have been entirely satisfactory to the authorities, to the teachers, and especially to the parents and children. The average daily attendance at the Consolidated Schools was on the whole over 55 per cent. higher than the average daily attendance at all of the schools which formerly served the localities; at Kingston, N.B., it was over 140 per cent. higher.

The attractiveness of the Consolidated Schools becomes in itself a form of compulsory education—the interest of the children being the power which secures regular attendance. A great point has been gained when love of the school and love of education there set the pace for progress.

One of the gratifying results is the larger number of boys and girls, young men and young women, from rural homes, who are doing advanced or High School work. At one of these schools there were about 100 pupils in the High school grades. Many of these are preparing to be teachers in rural schools. When teachers, who themselves have been educated in Consolidated Rural

Schools, with Nature Study, Household Science, and Manual Training, teach in single rural schools they will make the influence of their own training tell throughout many of the one-room schools.

The Macdonald Institute.

Sir William Macdonald gave the sum of $182,500 to provide buildings and equipment at the Ontario Agricultural College, Guelph, to train teachers now in the service for this "new education." Besides serving that purpose the institute has become a headquarters for Manual Training, for Household Science, and for providing short courses of instruction and training for farmers' daughters and others in cooking, sewing, domestic art, and other branches of Domestic Economy. Two buildings were erected. Short courses of instruction in Nature Study and School Gardens were provided without fees to teachers. The governments of four eastern Provinces where the Consolidated Schools were established gave scholarships to enable teachers to attend. Over 200 teachers took these courses. When pupils who pass through Consolidated Rural schools go on through the Normal Schools, each with advanced work and suitable professional courses in Manual Training, Nature Study, and Household Science, they will be thoroughly qualified to carry on this better system of education.

Macdonald College.

Macdonald College grew out of Sir William Macdonald's keen desire to help the rural population to build up the country and to make the most of it and themselves. In some measure it grew out of the School Garden Movement and the Consolidated Schools, to serve as a headquarters for the training of leaders. In some measure it grew out of the Manual-Training movement, which is a first necessity in the general education of pupils if they are to profit by Technical and Industrial Education afterwards. In some measure it grew out of the oft-expressed desire on the part of the educational leaders, over the whole Dominion, for such advancement and improvement of education for rural communities as would not only prepare the children for life at its best in rural occupations, but would also satisfy the people as being the right training for their children.

The work of Macdonald College is carried on in three departments or schools. In connection with the School of Agriculture there are the research and illustration departments.

There is a School of Household Science with research, and instruction for the homes of the people. That branch treats of the three prime necessaries of life—food, raiment, and housing. It is just as important that the woman should be educated for her sphere of management as the man for his.

In the School for Teachers the instruction and training are for teachers preparing for city and rural schools. It is important that the rural school and its teacher should stand in with those two other activities—the occupations and the homes of the parents—and that the children should be thoroughly

trained toward ability for, as well as an understanding of, what will be required of them in the fields and in the homes. The threefold character of the College fits it to train leaders for rural communities.

The instruction is vocational for the three fundamental, mothering occupations which nurture the race: (1) farming, whereby man becomes a partner with the Almighty and, through co-operation with nature, obtains the benefactions of Providence for food, clothing, and shelter; (2) the making of homes; (3) the teaching of children.

At Macdonald College the education of leaders for those fields of human endeavor is being carried on in close correlation. In times gone by the segregation of teachers-in-training, in institutions devoted exclusively to their use, had been no better for them than the isolated training of leaders for rural life in Colleges of Agriculture had been for their students. Until recently, neither of them had much in their courses which identified formal or liberal education with the activities of the homes. The substantial advantages of co-education, in this larger sense, are already evident. The homes, the schools, and the farms are finding the common centre from which radiate plans and labours: "A little child shall lead them."

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CHAPTER IV: INDUSTRIAL TRAINING AND TECHNICAL EDUCATION IN RELATION TO NATIONAL PROBLEMS.

SECTION 1: THE NATIONAL HERITAGE.

Self-governing peoples grow ever stronger when they are animated by some dominant purpose to maintain their ideals by further achievement. The reputation of Canada is a matter of concern; its character is of much greater consequence. Its place of honor, influence and power among the nations is worth caring for; the kinds of training and instruction which determine the abilities and qualifications of its young people for working and living are of supreme importance.

Towards the end of the last century Canadians began to find themselves as a united nation of agricultural, industrial, fishing, mining, commercial, and professional workers and home-makers.

Never before in the history of the race did seven millions of people have such a heritage come into their free possession. If the area of Europe is eleven, that of Canada is twelve, and much of it destined to be the setting of good homes of a robust people. Where else can be found a better place for homes for a people moved by the dominating purpose to win their way up by the strength of intelligent labour, justice and good-will, and to bring up with themselves all who may come to them?

The Physical Setting for Homes.

One can afford to speak of Canada in dimensions of thousand-mile stretches. Physical setting means much for the glory of human life in the first stretch of a thousand miles in from the Atlantic. The human race can be at its best in physique, in endurance, in tenacity, in aspiration, where apple trees grow in beauty and bounty and the summer air is full of the fragrance of clover blossoms. Here there is plenty of running water, with showers and sunshine in alternate abundance and, best of all, wholesome children rolling on the grass, picking flowers and climbing the apple trees.

Then there are a thousand miles of wilderness, a great reservoir north of the Great Lakes. It tempts the adventurous to seek gold and silver; its great areas for trees and lakes moisten the air and refresh the thirsty land on both sides by genial rains gathered from the wastes.

Then come a thousand miles of prairies, stretching out to the foothills of the Rocky Mountains. It took a thousand times a thousand years to make that place fit for habitation now. The frugality of prodigal nature was storing plant food in the soil for crops, not only that men might ship wheat, but that boys and

girls should have the finest chance that the race has found hitherto to be a strong, dominant, lovely and loving people.

Then half a thousand miles go over the mountains to the Pacific Ocean. It is a piece of the Creator's fine art in the rough, with the impressiveness of nature's majesty and the instability which endures. Tucked in between the mountains are fertile valleys with apples and plums and wheat to sustain the homes. A great asset is that five-hundred mile stretch, the mountain slopes with forests and coal and gold and silver, and the streams teeming with fish from the inexhaustible feeding places of the north.

That is a glimpse, merely the headlines, of the real estate for the national home. The responsibility now is that the people may be quite a match for it.

Occupations Call for Constructive, Conquering Qualities.

Occupation conserves the best that humanity has achieved. Canada is happy in occupations that minister to greatness in character. A new country needs the constructive and conquering qualities as well as the sedentary, absorbing, remembering capacities.

There are forests in vast areas, some of them as yet unsurveyed, and a climate and soil which let nature far more than restore the lumberman's cut. The forests are inexhaustible, in the abundance of their serving power for coming generations, now that a beginning has been made to conserve them by preventing fires, by providing patrols, and also by diffusing knowledge, training and conviction throughout the common schools.

Then there are fisheries. Men who are not afraid, who go down to the deep in ships, see the wonders of the Lord while they do their duty for their families. There is conservation of the quality of life by the unboasting, and the uncomplaining, heroic commonplaces of daily toil. With quiet tenacity, against conditions of discomfort which cannot be escaped, and carelessness of personal ease, such men teach others how to live.

Canada has great potential wealth in minerals. The areas and quantities of coal, iron, nickel, copper, silver, gold and oil are still in course of exploration and enumeration. The development of coal mining has been greatest in Nova Scotia, New Brunswick and British Columbia. The miners in Cape Breton may be taken as typical of the best of the others. Their physique and intelligence are tributes to the sturdy stock from which they sprang. The effectiveness of their training must be continuously enlarged and extended to all mining workers.

The water powers are not merely to illuminate houses and run machines, factories and cars, but to enlarge leisure by having the heaviest tasks done by further control and application of the electric current.

The other fundamental occupations which engage the large majority of people are farming, industrial work, making homes and teaching and training the young. These together provide some of the opportunities and means of culture which young people and grown people can turn into power—power of knowledge, of action and of character.

The farmer follows one of the conquering, constructive occupations, gathering wealth out of the otherwise chaos. His labor creates wealth and conserves the health and virility of the people. Farming is much more than moving soil, sowing grain, destroying weeds and harvesting crops. It is taking care of part of the face of Mother Earth as a home for her children,and providing their daily bread.

Uniting Rural and Urban Communities.

The growth of industrial activities has been marvellous for a period of 25 years. The prospects for the next 25 years are that the total growth will be very much greater.

The increasing numbers of thriving industries in comparatively small towns throughout all the eastern Provinces is a matter for congratulation. There are many establishments from which products are being shipped throughout the whole of Canada. In many cases these towns enjoy no special shipping facilities or any apparent advantages in cheap power or nearness to source of raw materials. The enterprise, ability and energy of a few men enabled them to make beginnings upon a small scale from which businesses employing from 20 up to 200 persons and over have grown up. The factories are situated where abundance of fresh air and light prevail, and where workmen and women can provide homes under favorable conditions.

Many instances might be mentioned from the observations of the Commission. From a furniture factory in Nova Scotia the products were being shipped throughout Canada, nearly one-half to the area west of Winnipeg and a portion to Newfoundland. This factory was not located on the main line of a through railway. In Prince Edward Island a machine shop employing about 100 men, was turning out gasolene engines, one-half being shipped west of Winnipeg. In New Brunswick a Foundry and Stove Works was doing a local trade and also supplying its output throughout the Northwest. At a comparatively small place in the Province of Quebec four prosperous industries, all of which had grown up within the last even or eight years, were shipping furniture, chairs, iron bedsteads and clothing to distant places, in each case about half to points west of Winnipeg. In a score of the smaller cities or towns in the Province of Ontario, similar activities and conditions prevailed. The cases cited may be regarded as typical and not exceptional.

While the industrial development of Canada has been going on in a recognized and prodigious way in the large cities there has been a concurrent development in the smaller places. In these latter, particularly, the interests of the surrounding rural population, through its surplus of workers and through business and social intercourse, are tied up closely with the industrial progress ot the towns.

Better Training Needed.

In the building trades the most notable feature of the new structures, small and large, is the increasing attention given to provisions for the health

and comfort of the occupants. In the realization of beauty of exteriors, the progress is slow and meagre. A very large proportion of the skilled workmen received their training before they came to Canada.

Adequate training for the young and appropriate instruction, under opportunities suited to the conditions, are needed and wanted everywhere for all industrial workers and industries.

Making homes is much more than building houses and providing furniture, food, clothing and things. It is creating a temple, not made with hands, as a place of culture for the best in human life.

Teaching and training the young is much more than instructing them in the arts of reading, writing and reckoning—those flexible useful tools of the intellect. Much of the time of the school has been consumed in these tasks; but one already sees in Canada the dawn of a happier day when those arts will be acquired joyfully by directed educational play, instead of painfully, reluctantly and with difficulty as separate school subjects. Then a larger portion of the time and efforts of the teachers may be devoted to caring for the health and the habits and the standards of the pupils while watching and directing the development of their powers of body, mind and spirit.

SECTION 2: MEANS OF DEVELOPMENT.

Canada is Behind the Times.

Until recently Canada was an interested and debating spectator of the movements for industrial efficiency. The training of young workers to deftness in manipulation and technique, and to an understanding of the principles and sciences which lie at the base of all trades and industries, was not provided for in the courses. When manufactured goods were wanted in increasing quantities and variety, and towns and cities were growing by leaps and bounds, it was discovered that there had been practically no organization of means for preparing the hundreds of thousands of young people to become the best qualified artizans, farmers and housekeepers in the world. The country's growing wealth was ample for the cost; but the educational work was becoming bookish in the extreme, and, worse than that, was developlng into school systems that had few points of contact with or relation to industrial, agricultural, or housekeeping life. When boys and girls grew restless at prolonged book work, few schools provided anything in the way of tools, materials or time for "fads", as manual training, nature study, school gardens and housekeeping subjects were called. The deep of the ages in human life was calling to their complex instincts and aptitudes, but the schools turned a dull ear, and most of the boys left as soon as they could.

The Way of National Progress.

Further advances are to be looked for through such means as these: First, those which lead young people to the achievement of joy through the processes

of labor as distinguished from its wages or other rewards. Secondly, those which produce the pleasure of working together for some end believed to be good for all. Pupils and students may work themselves into industrial and social efficiency by co-operating in productive labor, as well as play themselves into ability by means of team games. Both together are better than twice as much of either alone. Thirdly, those which yield gladness through creative, constructive, conserving work whereby each individual strives to give expression to his own concepts of utility and beauty in concrete things as well as in words and other symbols.

Heritage of Liberty, Justice, Intelligence.

The best that Canada has inherited is the quality of her life. The more immediate ancestors of the present generation loved liberty, cherished justice, and prized intelligence. These they had won by courage, by struggle, by patience and by privation. They left them to be improved by education.

All life is an unceasing struggle. The point is to choose the right objects and means. In the past Canada has been winning all along the line, with an occasional setback. Her warfare is ever against ignorance, helplessness, poverty, disease, vice and ill-wills. Industrial and technical education is to train individuals for that warfare. Its endeavours are most successful when the experiences, which it provides for each individual, are in themselves a vital part of the hard campaign. It must ever vary its strategy and tactics and weapons, as the field of operations is moved forward. The need of the times is education to qualify all to achieve satisfaction through labor and service and good-will.

The State and the Individual.

The interest of the State, as such, is that the individuals who compose it should be healthy, intelligent, capable, animated by goodwill towards their fellows, and that they should be able and willing to fill their places in the community as citizens discharging their duties and preserving their rights, as individuals in the economy of life, and as earners contributing to the material prosperity of the State.

The problem of finding an occupation suitable to the personality of the individual, and of preparing the individual to follow it with satisfaction and with benefit to the community, is ever present and becoming more complex and difficult.

So far as the individual is concerned, education is required for the preservation of health, the development of powers, the increase of knowledge, the maintenance of justice and liberty, and the strengthening of desire and will-energy to give effect in everyday life to the concepts of duty, truth, beauty and goodness.

Moreover, individuals require education to enable them to provide as workers what is requisite for the sustenance of life and the improvement of its conditions

for themselves and those dependent upon them. They require education as contributing earners so that their labor will provide satisfactory returns for themselves and also contribute to the advancement and prosperity of the State. They require education as members of society, as citizens in a community, and as members of the race. Otherwise advancement would cease, and progress would not be in the direction which the best men and women of all time have indicated as being desirable and right.

Education through Working.

So long as the homes and the occupations of the grown people gave the children an opportunity to participate actively in carrying on the work of the community, the instruction and teaching in the schools completed what was required for the all-round development of their ability. Until recent years opportunities for young people to participate in labor, such as grown people follow, were found in the homes and other places of work outside of school hours and school premises. Owing to the great changes during the last twenty or thirty years in the way in which the work of those who live in towns and cities is carried on, and the altered conditions of housekeeping and living, the children have less and less part in the work of the adult population, and less and less opportunity to learn by sharing in it. In consequence it has become evident that some other means must be taken to conserve in children and young people the love of work through participation in it, and to develop ability to do it well with happiness.

The Processes of Education.

Clearer insights into the character and mode of growth of the bodies and minds of children and young people, as well as a recognition of the need of training for occupations, have led to changed conceptions of the kind of education the schools should provide. While the education which was chiefly from books and concerned with theories and principles without actual practice or experience in the management of self, or the makings of things, or the control of affairs, served well as a preliminary education for those who were to take a college course and follow the learned professions or lead lives of leisure, it did not meet the needs of the great body of pupils who went directly into earning a livelihood by means of active bodily labor.

The opinion prevails more and more that education has two main functions which are not separable—the social and the biological. One has to do with qualifying the individual for meeting the social relations and economic obligations, and the other with developing the individual to the extent of his capacities and powers.

The processes of education are made up of acts and actions, controlled by intelligent purpose to bring about series of experiences which result in the growth of power, capacity and refinement of thinking, feeling, playing, working and living. The quality of intelligence and the extent of its control determine the

direction of development, while the degree of intensity in purpose sets the pace for the rate of progression. All real education comes through series of experiences in the individual learner, and some kind of it goes on as long as life and growth continue. The instruction given by a teacher and the information furnished by books contribute to the ideas and to the kinds of experience; but the experience of the learner is the process whereby his education is advanced.

Methods to Include Bodily Toil.

The aims of education have determined the kinds of experiences which have been provided for during the years of formal education in courses of study and training. The systems of education have depended upon the political and social conditions of the time and of the people. In all countries they have been a growth and evolution out of previous conditions, usually to meet the recognized needs, ambitions and aspirations of the individual and of the times; and, to a less extent, to prepare for conditions expected or hoped for by the individual, by society or by educational leaders. The methods of education have grown out of the experiences of the past, and they have been modified by the specific object aimed at by the teacher or school in a particular field or area of education. In their essence they consist in the application of what are believed at the time to be the principles of causes and effects.

It must not be forgotten that invigorating toil—invigorating bodily toil—is the only known road to health, strength and happiness. Agri-culture, industrial culture, technical culture, liberal culture, have no origin in idleness, indolence or sloth, which make for the corrosion of all the vigors of the physical, mental and moral nature. Culture is not always gained by the learning of languages, living or dead, or the acquisition of knowledge, scientific, mathematical or historical. It is the residuum in character—in body, in mind and in spirit—after every completed cycle of an educational experience.

The Steps in an Educational Experience.

Put into the language of everyday life, the main steps in every cycle of an educational experience are: observing, reflecting upon ideas, planning towards expression, feeling and managing into some form of expression. It appears that the closer in point of time the steps are taken together, the greater the growth of power and the surer the formation of habits. Frequency of experience is what forms habits, and not repetitions of instructions or information. In so far as these experiences can have close relation to practical activities, so much the better for the culture of the student. Such activities are those of body, mind and spirit in the individual's capacity as an earner, a member of society, and a trustee in the scheme of life.

The Consultative Committee of the Board of Education for England says:—

> Throughout English education (and the same course of thought may be observed in America and in other countries), efforts are now being made to combine these two ideals of general and industrial training. Handwork of all kinds is steadily, though slowly, forming

larger part of the Elementary Day School course. Civic and general instruction is recognized as having a claim to a more important place in courses of technical education.

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A combination of practical and general instruction for boys and girls, during adolescence, is of great value to the individual and to the community.

General Education Crowned by Industrial Training.

Industrial Training and Technical Education serve to supplement general education, and give to it a finishing course of experiences with special reference to the requirements of workers in industries, agriculture, housekeeping, commerce, transportation, mining and other occupations. They are means whereby the individual, the family, the community and the nation seek to develop the powers of the individuals for work, to prepare themselves to meet the conditions of working life, to alter these conditions in directions which seem desirable, and to conserve what is esteemed to be worth while out of the past in knowledge, c stoms, methods, institutions, standards and ideals.

From actual practice comes skill in the gentle art of living happily together while working for some good end. Alike in school and college, on the farm and in the factory, in shop and office, in home duties and public affairs, that kind of life develops a quick sense of responsibility, it establishes good standards close by which are understood, it nourishes conscience and strengthens the will-energy towards further culture, better work and happier living.

SECTION 3: CAUSES OF GERMANY'S PROGRESS.

Germany's Objects and Methods.

In the case of Germany, the problem which presented itself about forty years ago was the creation of a true national spirit, based upon ideals common to the whole people. The problem was how to bring about efficiency at home, with national solidarity through the ability and power of the individuals, animated by some common purpose which bound them together.

At first Germany organized the entire system of educational institutions in the several States of the Empire with a view to developing all the powers of the individual. That led to friendly struggle between individuals in the one State for place, positions and possessions. It was first self-preservation, then self-improvement, and then later on the conquering of the place in the world's market by the excellence and cheapness of the products to be sent to them.

Many other factors enter into the means whereby the industrial and commercial development of Germany has been brought about. Without describing these in detail, they may be mentioned as the extension and improvements of railways, improvement of canals and rivers, the opening up of ports, the creation and development of a merchant marine, all of which led not merely to the increase of facilities for communication and transportation, but also to a reduc-

tion in the cost of transportation. Another factor was the better utilization of natural resources by the application of scientific methods. And third, there was legislation protecting and stimulating industrial enterprises. Along with these there was the conservation and development of the individual's power by means of industrial training and technical schools. Thus technical education has taken a principal part in the development of Germany. It has been concurrent with other large movements, and they have all fitted into each other. It is practically impossible to do more than indicate some of the causes for the marvellous development within the nation during the present generation.

Germany from the English Point of View.

Dr. Reynolds, Director of the City of Manchester Institute of Technology, said in his address to the Imperial Education Conference at London, in 1911:—

> Whether we are "tired of Germany as a model" or not, she is too formidable an antagonist in the sphere of world politics, in the domain of high learning, in the field of manufacturing industry, and in the world's market, for us to ignore her rapid advance, or to be indifferent as to the cause.
>
> Within a generation of living men her sun has risen above the horizon, and has blazoned forth, as it is rising towards the zenith, with a splendor that compels our admiration, even though it may fill us with alarm.
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> In short, it was to education, thorough and far-reaching, that these wise counsellors looked for the means whereby their nation should regain and enhance its position in Europe and the world, and the faith and hope which inspired them has, as we all know only too well, been more than justified.

Mr. W. Harbutt Dawson, who is recognized as an authority on Germany and German conditions, in his book on the "Evolution of Modern Germany" mentions some of the reasons why, in his opinion, Germany has succeeded as far as she has done. His conclusions are:—

1. Germans work harder and for a longer number of hours.
2. The Germans regard commerce and industry as a science and an art, whereas elsewhere these are often counted as matters of rule-of-thumb.
3. The German standard of living is simple and less pretentious than the English or American, and the German manufacturer is content with less profit than would satisfy a British, American or Canadian manufacturer.
4. The German pays smaller salaries and lower wages; but German workmen enjoy substantial advantages in three great insurance benefits—sickness, accident and old age. The low wages and the long hours of Germany are being gradually changed, the wages becoming higher and the hours becoming shorter.
5. In general, the persistent endeavor of the Germans to come to the front has been supported by a skilful and even masterly adaptation of means to ends.

Where the German merchant as well as the manufacturer outrivals his competitors, his success may be attributed to one or other of three reasons:

(*a*) The lower price of his goods.
(*b*) Their superior or at least more serviceable or attractive character, and
(*c*) The more efficient arrangement which he makes for reaching and attracting purchasers.

Mr. Barker North, President of the British Institution of Teachers in Technical Institutions, makes the following statement:—

> The great German industrial concerns, knowing the value of the scientific expert, will wait for years for the final results of researches, which they realize will ultimately revolutionize an industry or may provide entirely new industries. Germany has developed a scheme of practical education of the masses which will provide her industries with an army of well-trained workers, and at the same time she has developed to the highest pitch the scientific training of original technologists. It may be that we require more Dreadnoughts, but no number of battleships will prevent our being left far behind in the race of industrial progress if we continue to rest self-satisfied on the laurels of the past.

American Opinions of Germany.

Mr. Edwin G. Cooley states in his "Vocational Education in Europe":—

> The German has therefore re-organized his entire system of educational institutions, with a view to developing all his powers, not only for the struggle between individuals in the German State, but in the struggle for supremacy in the industrial and commercial fields of the world. It was then not merely the motive of the subdual that led to this movement, but self-preservation, as in matters of this sort there is no such thing as standing still. Germany was compelled to move on to new conquests after the completion of the war with France, and she made use of German thoroughness in her campaign for industrial supremacy.

Some of the reasons for Germany's growth in industry and commerce are presented by Mr. Harlow Stafford Person in his prize essay on Industrial Education. They are substantially as follows:—

> Industrial Germany as we know it has developed mainly within the last twenty-five years. Germany has achieved what she has done not because of any extraordinary resources, nor merely because of her rapidly increasing population. Two factors are worthy of special mention. One of these is the quality acquired through centuries of intensive labor, the capacity for taking pains; the second is the paternalistic state. The paternalism of the German Empire, applied to the creation of industrial efficiency, has secured wonderful results from the limited natural resources of the Empire. The creation of this powerful industrial state has been due not to superior natural resources, but to deliberate effort in the face of relatively inferior resources. Germany relies upon her advantage of having a highly developed system of technical education. The Germans themselves attribute their accomplishment of the last twenty-five years to their system of industrial education.

An Eminent German's Explanation.

While popular opinion attributes the rate and extent of the industrial and commercial progress of Germany to its systems of technical education, it is wholly impossible to assign to any one definite cause the marvellous development within the nation during the present generation. Dr. Kerschensteiner, the administrative head of education in Munich, may be regarded as one of the most competent authorities on this question. He attributes the lion's share in the rise of German industry and commerce to other causes. He puts first the German character with its tendency to reflection, its thoroughness, tenacity, and capacity for subordination. He indicates as another cause the German merchant with his flexibility, adaptability, and his zeal in the study of foreign languages and foreign conditions. He suggests that German poverty may have been a third cause. Before 1870 Germany was a poor country. Its people were frugal, industrious, and like other poor races they had forged for themselves one of the best weapons in the struggle in developing the faculty for doing without things, or of dispensing with things. He wonders whether the riches which have come to the empire in one generation will bring weakness rather than increased strength. To quote his words:

> The Germany of to-day has grown rich within one generation. It remains to be seen if it has strength enough in spite of this wealth, to work and struggle in the sweat of its brow. History generally teaches the contrary. Yet our over-population and the tension existing in all other civilized states may perhaps supply us with the same motives we formerly owed to poverty.

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One factor, however, has been of eminent importance in the development of Germa industry. That is the scientific training of German Engineers; in other words the serious scientific spirit that rules in our German technical universities.

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And among other economic causes it is certainly this spirit of unselfishness, of devotion to an ideal aim, that has led our technical officers of industry to victory. We thus arrive at the conclusion: that real scientific culture in union with that discipline of character which teaches thoroughness and devotion to aims lying outside of ourselves are of no less importance for the industrial development of a country than technical training.

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Among the answers given by German manufacturers to the inquiry of the German Committee for Technical Schools there is one which lays its finger on the essential point of all education:

"A far more important problem for the machine-builders' schools than the exact amount of instruction in the single branches is to develop the character and intelligence of the pupils. Teaching suited to the future calling must be regarded merely as a means to this end. We shall always be able to work successfully with men of character and intelligence, whether their schooling has led them further in one branch or another. Knowledge learned at school can never be more than the rudiments of knowledge gained by experience in special work."

This lesson which a German machine-builder gives the committee must be taken to heart by the German day trade schools and all the trade schools of the world. Technical instruction must be regarded in the first place as a means of character-training, and it must be supplemented by other forms of instruction with a view to making it as many-sided as possible. In the life of great economic groups and of nations there are moments, and they are the critical moments, in which neither knowledge nor skill, but character, decides the day—character that has learned to regard its own egoistic interests as of no account when their sacrifice is demanded by the welfare of the community to which we belong, the welfare of the service that we have chosen, the welfare of the subordinates intrusted to our care.

SECTION 4: GENERAL SUMMARY.

Character and Capable Management.

Experience has made it evident that technical education and industrial training which prepare an individual to earn a living and to contribute to the prosperity of the State by means of productive, constructive and conserving labor can also be the means of culture for his mind and of development o his spirit. There need be no separation between the training which qualifies young persons to become good workm n or good workwomen and the education which broadens the sympathies and enlarges the interests through literature, history, science, art and religion.

The organization of an efficient system of industrial training and technical education and keeping it going afterwards are questions of men and women and management. The progress does not depend upon having conditions without drawbacks and difficulties. Every country for itself and place for itself must depend upon men and women who have fine initiative, sound intelligence, and plenty of wholesome persevering diligence.

Capable management stands out supreme above natural advantages. To observe carefully, to think clearly and consecutively, to learn from others, and then to put all together with the least possible waste—that is the immediate task before Canadians.

The National Depends on the Individual.

Every national problem can be dealt with to the greatest advantage by intelligent and capable men and women. Intelligence and ability are fruits of education limited in extent according to the measure of inherited capacity, personal diligence and accessibility of opportunities. Training and instruction in some form are the chief means for conserving and developing the powers, capacities and characters of individuals.

As the powers and influence of individuals in matters of government—Local, Provincial and Dominion—become greater, it becomes correspondingly necessary that each and all should have the kind and amount of education which will enable and cause them to live and work better because of it than if they had not had it.

Some Conclusions.

In consequence it appears to the Commission that Industrial Training and Technical Education should be provided:—

(1) In order that the interest of boys and girls in their own training and instruction might be increased and an understanding of their relation to working and living might be clearer to themselves from twelve years of age onwards.

(2) In order that the period of authoritative supervision, and of organized education to the extent of at least half a day per week, should be prolonged during adolescence, and that boys and girls should themselves desire those advantages until the age of seventeen or eighteen years.

(3) In order that all might become qualified, to the full extent of their capacities, to fill their places as individuals, as contributing earners, as citiziens and as members of the race.

(4) In order that the nation as a whole might be more intelligent, capable and prosperous, and more united in its efforts to meet national problems and solve them wisely as they come.

The Commission holds that the large inclusive aim of Canada is that her people shall be great in character and ability, even great enough to match the matchless heritage that has come to her in blood and ideals, in possessions and institutions, in opportunities and obligations. The greatness of her composite races will come through the perfecting of the finest of all fine arts—the fine art of living happily and prosperously together WHILE WORKING WITH INTELLIGENT SKILL AND UNALTERING WILL for ends believed to be for the common good. Industrial Training and Technical Education are among the means to that end.

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CHAPTER V: INDUSTRIAL TRAINING AND TECHNICAL EDUCATION IN RELATION TO THE NEEDS, DUTIES AND RIGHTS OF INDIVIDUALS.

SECTION I: THE INDIVIDUAL IN CIVILIZATION.

Under modern conditions the term civilization is commonly used as a bland, omnibus word to indicate the forms of organization and effort employed for the achievement of the main aims and ideals which animate and dominate a people for the time being. At present the objects are obtrusively commercial and industrial. The forms themselves are ever changing, while the inner force which uses them persists. The inner power of the people expresses itself progressively in human qualities and social and economic conditions.

In the struggle of modern industry to produce goods cheaply in order to make profits, three elements are of importance—raw materials, labor-saving machinery and organization. These three receive so much attention that sometimes the conditions of and results upon the individual workers are entirely lost sight of. The most important asset in any State is the value of the individual citizens themselves. While the conservation of natural resources and he promotion of industries are important and the development of trade has possibilities of benefit, the conservation of life and ability in the individual workers is supreme. Next to that comes the provision for conservation of opportunity for satisfactory employment.

Imperfectly or Improperly Employed.

Already in Canada there have been times when want of employment to even willing workers has been keenly felt ; and but little care has been taken to guard against the continuation of conditions under which great numbers are imperfectly employed. Such are those who are employed at occupations for which they are not qualified or for which they have no taste. Little has been done to correct conditions which permit and encourage considerable numbers to be improperly employed. Such are those whose time and ability are devoted almost entirely to acquiring control over property, instead of doing something which contributes to the sum total of wealth or the welfare of the people in themselves.

The Hope of Civilization.

Fundamentally and permanently the organization and effort of civilization include:

(1) Whatever has been planned for, hoped for or undertaken to keep the individual and the family going on towards the realization of justice, liberty and happiness.

(2) Whatever has been planned or undertaken to add to the reserves of wealth in material things and in the uses of the materials and forces of nature.

> In this sense wealth is represented by such things as buildings, furniture, clothing, foods, and materials for these; roads, sidewalks, railways, steamships and other means of transportation and conveyance; objects and instruments of science and art; tools and machinery of all kinds and products from them; warehouses, shops, telegraphs, telephones; domestic animals, improvements to agriculture, fisheries, mining and forestry; improvements in the utilization of fuels, water powers and waterways; water and sewerage systems and other public utilities.

(3) Whatever makes for the enlargement of friendships and the increase of friends.

(4) Whatever makes for the improvement of capacities, knowledge and powers of individuals for accomplishment, achievement and attainment in body, mind and spirit.

(5) Whatever helps towards making opportunities for well-being, through labor, leisure and living, more accessible and less avoidable.

(6) Whatever makes for the formation of good habits, the maintenance of high standards of conduct and character, and the cherishing and following of high ideals of duty.

(7) Whatever makes for the protection of children and the betterment of the quality of life.

(8) In general, whatever ministers to progress through service which combats ignorance, lack of ability, poverty, disease, vice and ill-wills.

Part Played by Industry.

In each of the foregoing spheres of desire and action, industry plays an important part. It has always done so. The dominant industrial activities, which occupy the people for the time being, set bounds to attainment in each of the spheres outlined. Personal human values and opportunities are the only terms in which the progress of civilization can be adequately measured, and these can be immensely enhanced by the union of education and industry.

Where the individual provides for his own primary wants in the way of food, clothing, shelter, tools and weapons wholly by his own labor, he requires the kind of training which qualifies him to do all the work involved. When he devotes himself to the production of more of one kind of commodity than he wants for his own sustenance and that of his family, and desires to exchange it

for other things, that marks the beginning of specialized industry and commerce. During the last century the trend of development was all in the direction of such specialization, with its consequent increase in internal and international commerce.

Factory Methods Limit Development of Individuals.

The differentiation of the kinds of work done by individuals in their occupations has led to an almost entire change in the kind of knowledge, strength and skill required by the individual for following his particular occupation successfully. When the specialization of occupations had proceeded to great lengths the organization of the workers in factories in many of the industries and occupations was brought about. That resulted in what has been called the industrial revolution, under which the single craftsman gave way to the worker in a factory organized for the most economical production of things by the use of machinery. The application of steam power and of water power, and more recently of electrical power, to the driving of machines, and the specialization of machinery itself for the accomplishment of complicated and difficult processes of manipulation and manufacture have, in many cases, made the workman occupy only the place of a skilled attendant upon a machine. Less of personal constructive, manipulative skill is required. While deftness and quickness of movement are found essential, only a few individuals are required to understand the machine and have knowledge of all its parts and ability to correct or adjust anything that goes wrong with it.

The organization of industrial activity into factories has not affected all trades alike, although it has modified nearly all occupations known as skilled crafts. Examples of these may be named as the trades of spinning, knitting, weaving; the production of clothing; the manufacture of boots and shoes; the manufacture of instruments, utensils, vehicles and tools; woodworking for the production of furniture and parts of buildings; metal working for the production into useful forms of iron, steel, etc.; the production of cutlery and other forms of hardware; printing and the making of books; the manufacture of paper; the making of glass; sawing in lumber mills; milling; the manufacture of dyestuffs, and a hundred other forms of occupations and crafts.

Such an organization of industry as has been indicated calls for the service of a relatively small number of men with directive ability. It also gives opportunity to persons possessing control of capital or wealth to provide the material means through which the unskilled labor finds its application to meet human needs.

Where the organization of industry provides for the employment and payment of a comparatively large number of unskilled workers, whose main contribution is bodily strength to carry out simple appointed tasks requiring little skill, initiative or intelligence, the forms of education required by such persons for their occupations are few and easy to provide. As workers many of them occupy a plane hardly higher relatively than that of slaves when civilization permitted that form of ownership of life.

SECTION 2: THE PROTECTION OF EDUCATION REQUIRED.

To Prevent the Exploitation of Labor.

But such workers as free citizens and voters require education; and the State, for its protection and benefit, requires that they should be educated to enable them to discharge the duties of citizenship in a safe and satisfactory manner. The safety of the State and considerations for the welfare of the race demand that they should receive education suitable to their needs as individuals in the long chain of life, in order that it might not be debased or weakened in their hands.

In the earlier stages of civilization industry was the servant of humanity, and was always employed to meet some need of service by individuals or communities. The question thrusts itself forward now, as to whether modern organized industry is to continue as the servant of humanity, or whether it is becoming an instrument in the hands of a comparatively few individuals, whereby they seek to obtain control of wealth (the reserves) and of the means of producing more wealth, including the control of human labor. When the main object of industry ceases to be products for service, and turns to profits for the employers and undue returns on capital, the conditions and situation are full of danger.

In this connection it is worth while referring to some of the conditions which have prevailed in and through one of the textile industries. A study of the conditions under which the cotton industry in its various aspects has been developed, reveals a saddening record of human degradation along the whole trail. In the production of cotton there was the exploitation of slavery and slave labor; and on the other hand in the manufacture of the cotton in factories there was the exploitation of child labor and women labor with the long hours, the confined and debilitating air, the infernal rattle of machinery, and the whole ghastly story. The beneficent cotton plant, capable of being turned into products of beauty and use, with nothing inherent in any of the tasks of its production or manufacture which might not have ministered to the development of ability and the creation of conditions for happiness and satisfactions, has been the occasion of blight on millions of lives. The exploitation of ignorant labor has ever been an injury and a menace to wholesome civilization, while the education of labor has ministered to progress and the well-being of the workers.

Commerce Follows Factory Methods.

Those who are occupied with the exchange of commodities in the field of commerce have found their occupation becoming organized in a manner somewhat similar to that which has prevailed in the production of manufactured articles. Whereas the shop-keeper with an assistant or two used to be the middle-

man supplying goods to his customers, he, in many cases, has given place to the departmental store or to the huge emporium which employs a large number of sales clerks. With each clerk confined in his activities to one department, the requirements of knowledge and executive ability, while not less exacting, are less complex and comprehensive than formerly. The departmental head in commerce parallels the foreman or superintendent in the industrial factory; and, at the top, those who have directive and organizing intelligence and ability, and power to command and use wealth or capital, are like the managers or owners of industrial establishments.

In the field of transportation a similar evolution has taken place, and even large railway systems are being consolidated into still huger concerns by amalgamations or understandings. In this department there is less need and less demand for unskilled labor except in the manual labor of constructing roadbeds and work of that sort.

Organization Lacking Where Most Needed.

Farming is the one occupation which has lent itself least to, and seems least likely to follow, the trend of the other occupations which have been mentioned. In Canada the individual farmer in most cases combines in himself the positions of manager, foreman, superintendent, skilled workman, laborer and chore-boy. He has to know not only the systems and methods of management and the processes and operations of production, but he is required to have scientific knowledge of soils, seeds, manures, crops, animals, products, diseases, insects and influences of weather. Farming is the application of common sense—that is, of organized knowledge or science, organized wisdom and organized good-will—to all these things and to his fellows. He must have commercial knowledge and intelligence regarding markets, qualities of products, packing, transportation, etc. And he must learn to organize and co-operate with his fellow-farmers in business.

In addition to the general knowledge, outlined but not exhausted in the foregoing enumeration, if he specializes in any particular department he must have a more thorough knowledge of the principles, methods, processes and conditions which belong to it or prevail in it. For instance, if a farmer specializes in fruit growing he must know how to manage the plants which produce fruit, and to provide for the conditions under which he will be able to sell it to the greatest advantage.

In fisheries, in mining and quarrying, and in forestry, fewer changes have taken place in the conditions of production so far as the skill and knowledge of the individual worker are required for the efficient following up of his calling. But he requires the new knowledge, which is now available to him and which was inaccessible to his predecessor, of natural laws whereby he may obtain the best results from the expenditure of his labor.

Factories Absorb Girls and Women.

The ultimate products of the labor of women are not widely different in their nature from the products of women's work before the time of the industrial revolution. The labor of women has always been applied towards the production of the clothing of the family, the preparation of its food and the maintenance of the house and home. Since the organization of industry made it practicable to produce articles of clothing, etc., by means of machinery and organized labor, in factories at less cost than by the single worker in her home, the woman worker has been absorbed into the factory system. The withdrawal of woman from the home, in many cases, has not meant that her labor was applied to a different kind of service for the community, but to production under different conditions. That applies in perhaps greater measure to the production of the various forms of clothing, ornaments and furnishing of the homes than to the preparation of foods. In this connection also it is to be remembered that the preparation of foods for consumption in modern cities calls for a different measure and kind of cooking. Few families of wage earners now purchase flour and make their own bread. Cooked meats, cooked fruits, "ready mades" of all sorts are purchased and used, whereas formerly the raw materials were produced or products were bought and prepared for use by the woman or women of the house.

The more expensive scale of living has brought about demands for scores of products and things which were almost unknown in the homes of the same class of workers a generation ago. Women and girls go into factories for the production of these things, such as garments, ornaments, confectionery, buttons, boxes and dozens of small articles of common use. Women are employed also in increasing numbers in sales shops and in offices in connection with business administration, correspondence, and the keeping of records.

Women Workers Need Special Training.

To enable the women to perform these several gainful occupations with success, that is, with satisfaction to their employers and satisfaction and contentment to themselves, they require special knowledge and special training. If these are not obtained, the effectiveness of the worker and the results of her work are to that extent lessened.

The great fundamental occupations of housekeeping and homemaking are still almost exclusively in the hands of women. Without question they have natural aptitude, and most of them natural liking, taste and preference for employment in these capacities. It is none the less highly important that they should be enabled to acquire the knowledge necessary to meet modern conditions and to obtain experience in early life which will enable them to develop adequate ability without waste, disappointment and injury to themselves and others.

It seems an obvious obligation and privilege upon all the people to ensure that the girls will have opportunities, assistance and guidance to enable them to become qualified for that occupation which, more than any other, is necessary

to the continuous well-being, strength, health, progress and happiness of the whole people. While food, raiment and shelter are not the main objects of life, life is more worth living to the individual and the community where the houses and homes are kept and managed by women who have been educated in such a way as to enable them to make the best use of the native talent which they possess.

SECTION 3: MORE SERVICE REQUIRED FROM THE SCHOOL.

Larger Duties of the School.

The evolution of the school has been as notable as that of any other institution. The elementary school, which came in first to supplement the training and instruction which the boy and girl received in helping their parents, has been left to accomplish nearly the whole task from six to fourteen. The demand is everywhere insistent that the schools shall meet the larger duties which are now thrown upon them by the changed social and industrial conditions.

The following extracts are taken from a Report by the Consultative Committee of the Board of Education of England.

The desirability of giving to adolescents a better Educational Equipment *for their future duties.*

So far as boys are concerned, therefore, the Committee have no hesitation in saying that, under modern industrial conditions, the majority are not sufficiently equipped for the battle of life when they leave school. Nor have they, in many trades, any reasonable opportunities of obtaining that necessary equipment during the course of their work.

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As regards the general question of the educational equipment of adolescents, three questions may rightly be asked of those who advocate a great extension of educational opportunity for the rank and file of the younger workpeople in this country. First, will the education which it is proposed to give make the young people better off pecuniarily when then come to manhood and womanhood? Second, will it give them happier lives? Third, will the outlay from public funds which the proposed educational changes must involve be repaid, fully though indirectly, to the nation, through the increased economic efficiency of the community?

(1) Does Capital, by promoting popular education, secure skilled service at a cheaper rate, retaining for itself most of the advantage which it would otherwise have had to share with its highly paid employees—highly paid because they could command the high rent of scarce ability?

Posts of responsibility are not predetermined in number by some iron law of markets. An increasing stock of practical ability in a nation enlarges the range of its ecomonic activities and rapidly adds, through all the gradations of directive responsibility, to the number of well-remunerated posts, which could never have existed if men had not been forthcoming to fill them.

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(2) A more difficult issue is raised by the question whether increased opportunities of education enhance the happiness of the mass of the people. The point was raised by one of the Committee's witnesses, and they feel they ought not to ignore it. In their opinion, all turns upon what is meant by happiness. Education may well destroy the easy-going comfort of a thoughtless mind. It may impart a desire for an intellectual or artistic occupation which the individual has not the means or opportunity of entering. It may stimulate ambitions which cannot be realised. It may increase a man's sensitiveness to the hardships and limitations of his lot. Like all great changes, it brings evil with it as well as good. But few would identify true happiness with obtuseness of feeling, coarseness of sympathy and torpor of mind. The right kind of education, working upon a character which is susceptible to its power, gives a man adaptability, self-reliance, balance of thought, sobriety of judgment. It may raise him above self-interest and beyond the

reach of individual disappointment to a point of view from which he sees the whole of which his individual life is but a part, and may bring him to the state of mind in which he finds a real happiness in work well done.

(3) The third question is whether the increased economic efficiency of the community will repay to the nation as a whole the outlay involved in great extensions of educational opportunity to the masses of the people. From a purely economic point of view, this question may be answered in the affirmative, provided that the education is at once practical and humanising. The enhanced economic power of the community increases the production of wealth and the efficiency of its thrifty distribution. It will make possible a more scientific distribution of labour, a fairer adjustment of tasks, a more prudent anticipation of the future. It will lessen waste and, through the avoidance of waste, may enormously increase the fund of wealth available for distribution among the community.

What is true of the material gain which may result from improved education is true also of the moral gain. The temper, the outlook, the recreations, the ideals of a nation may be so refined and raised by the right kind of training as to secure for the mass of the people a more choiceworthy life.

Adaptation to New Conditions.

The following extracts are taken from the Report of a Committee of the National Education Association of the United States on *the Place of Industries in Public Education.*

Much of the current discussion of reform movements of various kinds is vitiated because adequate attention is not paid to the fundamental forces which are producing the visible social changes.

In the first instance the social environment, including the sum total of influences which bear upon the life of the individual, has been enlarged. People, intelligence, goods, now come from or go to distant parts of the earth quickly, regularly, and surely. The world of the twentieth century is one vast neighborhood; no dark, unknown continents remain upon the map. In the second place, specialization of industry has tended to confine the life and activity of the vast majority of workers of all grades within very narrow grooves. While modern methods of communication and transportation, world markets and the multiplicity of industrial products offer opportunities to broaden the mental horizon and tend to differentiate the demand of each individual for necessities, comforts, and luxuries, occupations have been specialized and subdivided until the life of the individual is cramped. Earlier forms of industry gave the worker a relatively broad outlook, and did not force him into a rigid routine. Our daily work and home environment usually tend under modern conditions to astigmatize our view at the time when democracy and world unity should thrive. This is the grim and forbidding paradox of modern industrial life.

The factory system, for example, is an economical and labor-saving device; but it has certain undesirable features such as extreme specialization and the employment of young children. How can the system be preserved and the danger reduced to a minimum? is our problem. It is not: How can the system be abolished? The task is not the preservation of the old intact; but it is the adaptation of social, political, ethical, and educational ideals and methods to the unique conditions produced by industrial advance.

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The greatest wealth of a modern nation is bound up in its citizenship; and its citizenship, thanks to the "industrial factor" in modern life, is chiefly a social product. The presentation of abstract educational ideals and values without due regard for the conditions of home, shop, and leisure-hour environment, is a futile process. The great problem of the present, the one which towers above all others, is to universalize opportunity for decent health and comfortable living not for a few but for all; it is to give to each and every child in this great and rich land of ours the heritage of a child—decent home surroundings, sufficient and proper food, opportunity to play, and a chance to use hand and brain in some form of constructive work. This is the social, political, and educational problem of the age; and the peculiar form in which it is presented to the present generation is due to industrial advance. The key to its solution can be found only by him who searches by way of the path of industrial evolution. The "industrial factor" is the chief factor in modern social, political, and educational problems; because industry is the determining factor in fixing the conditions of living, working, playing, associating, resting.

Personal Welfare and State Prosperity.

In view of these and similar considerations it becomes more and more evident that education must have a vocational aim and result if the industrial

activities of the people are to be of benefit to all the individuals and to the State which they constitute. It must be kept in mind that the first and chief object of Industrial Training and Technical Education must be the personal welfare of the individuals who are to participate in it; second, the prosperity and strength of the State; and, third, the advancement and improvement of Industry as such, and that only as consistent with and subordinate to the other two.

In the organization of this form of education, the attempt must be made to meet all the needs of all the people, with care that n ne shall be debased by the occupations for which they are prepared, and none shall be debarred from earning satisfaction, as well as satisfactory wages, from labor.

Some Conclusions.

In the opinion of the Commission it is important,—

(1) That workers in factories whose main task is to attend or operate machines should receive instruction and training which would develop some all-round power and skill, widen their knowledge and increase their interests beyond the routine of automatic operations. By such means industrial activity would minister to the development of human life instead of subordinating it to the gain of profits without concern for the well-being and happiness of the individual workers.

(2) That such training should be provided as will conserve and develop occupations wherein skilled handicraft is required,—this for the sake of the workers as well as for the quality and character of products of certain kinds.

(3) That the interests of the rural population should be conserved and promoted as far as possible by Industrial Training and Technibal Education suitable to the needs of its workers.

(4) That the needs of girls and women for organized instruction and training in the elements of the sciences and arts, which underlie successful housekeeping and home-making under modern industrial conditions, should be recognized and provided for. The housekeepers and the homemakers are always the mainstay of advancing civilization.

(5) That increasing attention should be given to opportunties, which now exist or which may be provided, for the conservation of life and health and for the development of human powers to the end that individuals generally may attain happiness, prosperity aad contentment through intelligent labor in Canada.

CHAPTER VI: ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL TRAINING AND TECHNICAL EDUCATION.

Introductory.

Systems of education and courses of study have come into existence without much clear recognition of their character by the people as a whole. The character and position of the courses, and even of the subjects as logically related to the systems, have often been such as to obscure the pupil and his needs. However, the trend of progress in recent years has been in the direction of reversing that situation, and additions, extensions and enlargements of courses have been made until they have lost their organic unity for the dual purpose of training the powers of the pupil and imparting the necessary amount of useful and therefore cultural knowledge.

The greatest deficiency in recent years has been due to changing conditions under which occupations are followed, and which have in large measure deprived many young people of opportunities and means of being trained by participating in them. The system which included apprenticeship, or similar training with its accompanying discipline, provided a fair all-round training when supplemented by the usual intellectual studies of the school.

The question now is, since that opportunity of participating in occupations as apprentices no longer exists in the form in which it used to serve the young people, shall the schools be organized to meet the needs which were formerly met in the other way? In other words, shall public schools undertake not merely to give general education and Pre-vocational Education up to 14 years of age, but shall they also supplement the experience of those who have begun to earn their living at 14 in such a way that their ability as workers will be increased, their attitude towards life kept wholesome, and their habits of body and mind formed so as to ensure continued education. Another way of putting the question is, shall the schools continue to provide vocational education only or chiefly for those who are to follow professional occupations?

The chief reasons why pupils leave school at an early age, or before receiving a Secondary School education, are the limited resources of the parents or the dissatisfaction of the parent or the child with what they consider to be the unpractical and unprofitable work at the school.

One of the fundamental objects of Industrial and Technical Education is to develop as far as practicable the working capacity of the pupil and, at the same time, the experience of joy or satisfaction from the processes of the work itself. When education does not accomplish that, the schools do not promote industrial efficiency to the full extent; and in consequence young people enter upon their life's work without a right understanding of work itself and are likely

to miss pleasure and satisfaction from doing it. The way to make men and women like their work is to help them to understand it and do it well.

The ideal or perfect system would provide for the participation in the opportunities for education of all individuals according to their ability, the occupation they are to follow, and the place they are to occupy in the State.

The nation, as well as the family and the individual, are concerned on the economic side. A well educated, that is a well informed and well trained, individual can produce more for himself and his family and at the same time contribute more in an economic sense to the community and the state. What is true in the economic sense is true also in a social sense and in respect to citizenship.

The great industries, and to a less extent the smaller trades, depend more and more upon the successful application of science and scientific methods to manufacturing processes. Improved methods of transportation are bringing all countries closer and placing them nearer the same level of opportunity in the use of natural resources. Improved tools and labor-saving machinery are rendering mere manual skill of less importance than formerly. What counts for most is dexterity, scientific knowledge and the skilful application of it to the needs of the industry by men and women of good character.

Apart from, and still contained within the interests of the State and the industries, the needs of the individual must be considered. Since the largest part of the life and strength of each individual will be taken up with the occupation whereby he earns a living for himself and his family, it is important that his education should prepare him to follow his trade or calling in such a way that he will derive not only satisfactory compensation in the form of wages, products or profits from his labors, but that he will have satisfaction and happiness in the actual doing of his work for its own sake. It is still more important that education should widen his interests and broaden his sympathies so that the chief object of work, which is to make life itself worth while, shall be attained in part through the experiences of the means whereby he makes his living.

An adequate system of Industrial Training and Technical Education should fit the social and economic conditions of the time in such a way that each individual would have the benefit of opportunity and influences for educational growth so long as there was growth of powers of body, mind or spirit. This does not imply that there should be, for most boys and girls after 14, much time spent in formal education in the Elementary or Secondary School. The Vocational School should enable the individual to go on with his education through its courses, through contact with his fellows, through the experience of his work, through the use of books, and through other means put within his reach under the existing organization of society.

SECTION 1: THE PRACTICE IN DIFFERENT COUNTRIES.

The organization of this kind of education has followed different courses in different countries. Sometimes it has been initiated by those in charge of the Government and in a measure imposed upon the people; in other cases it

appears to have arisen from the efforts of the people themselves in the several communities.

The control of education rests with different authorities in different countries and communities. In most cases the Central Authority for the State indicates the general direction in which education should be carried on, establishes standards for the training and qualification of teachers in schools which receive support from the public funds, whether State or local, and usually by means of advisory publications, inspection and the payment of additional grants for extra good work, endeavors to keep the education up to certain standards of efficiency.

The local community, through some means provided for by law, such as a municipal authority, school board, or corporation, has control of the institutions, the engagement of teachers and the general work of the school. Usually the Local Authority is allowed considerable latitude as to the Courses of Study and the manner in which they are to be followed. It also has full control or some control as to the qualifications required for the admission of pupils. The Local Authority is usually charged with the responsibility of providing buildings and equipment. Ordinarily these must conform to standards and regulations, and in some cases the Central Government provides part of the cost.

To Learn but not to Copy.

The Commission does not consider that the form of organization, or the practice in administration, in any other country can be adopted in full with advantage in Canada. Differences in the traditions and organization of education and of society itself have to be taken into consideration.

The extended reports of the inquiry in the several countries reveal some general principles which are common to all their systems and methods. The Commission presents a statement of the means whereby these principles, which have been found suitable and beneficial, can be applied most advantageously to Canada in Chapter VII: A Dominion Development Policy.

The organization and administration in France is suggestive and instructive particularly in respect to the system of supervision and inspection.

In the case of Switzerland where the Federal Authorities contribute to the maintenance of Technical Education, the inspection by the Federal Authorities is of a sort which leaves nearly everything to the authorities of the Canton and of the Commune. The Federal Authorities seek to assure themselves that the money which they provide is used for the purposes for which it was voted and that the administration of it is reasonably efficient.

To supplement the Reports of the inquiry in the several countries as presented in Part III, the following appropriate matters relating to England, Germany and the United States are introduced here.

A: IN ENGLAND.

In England the administration of Industrial Training and Technical Education comes under the Education Authority which is responsible for

Elementary and other public education in the County or Borough, as the case may be. The question of the further devolution of powers from the Education Authority to Local Bodies was referred by the Board of Education to the Consultative Committee. The following two paragraphs from their report shed some light on a common quality in human nature and a dominant motive for its exercise in the public service.

As regards the general principles which appear to them to underly any successful scheme of devolution, the Committee consider that experience shows that *local bodies* will, as a rule, work better and be better manned if, in the first place, important and interesting duties are intrusted to them, and if, in the second place, they are given considerable executive powers in carrying out those duties. This might be combined with the retention by the Education Committee of the ultimate control of their sub-committees' proceedings, although the exercise of that control might seldom be necessary.

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One word as to what we mean by devolution, and what the precise functions allotted to *local bodies* should be, and how far they should extend. The main object being to enlist local interest and enthusiasm on behalf of education, there must be responsibility attaching to the work; and it will be found that the real definition of responsibilty amongst local bodies, whether Managers, Correspondents, Attendance Officers, or others, will be the expenditure of money.

B: IN GERMANY.

In some of the States the Governments took the initiative for the purpose of giving the people opportunities, and inducing them to avail themselves of these opportunities, whereby they might become efficient industrially, and develop qualities of good citizenship through contact with educational work after leaving the Elementary Schools. Individuals and Local Authorities supported the action of the Governments. In these matters it is difficult to tell which was the first cause, and which the effect. One can only say that the clearest intelligence of the communities, as represented on the one hand by individuals and on the other hand by the organized State Governments of the time, concurred in believing that the prosperity and the strength of the State would be benefited by Industrial Training and Technical Education; and that the ability of the individual, his well being and his means of providing for himself and family, would be increased. There is no hostility or conflict between the interests of the State as an organized whole and the interests of individuals as citizens, or the interests of individuals as workers.

In other States the Trade Guilds, Corporations and individuals took the initiative and were active in establishing and maintaining schools. The Guilds still give grants to the maintenance of some schools, and their members take an active part in the administration of them.

Local Bodies and Central Authorities.

Authority is usually left with the Local Body to make arrangements concerning Courses of Study to be provided, teachers to be employed and the general management and discipline of the schools. A Central or Higher Authority possesses the power, which as far as could be learned it seldom exer-

cises, of making general regulations as to minimum standard of attainment, minimum qualification of teachers, length of courses, and such matters. This Central or Higher Authority does exercise the right to examine the schools by means of visits of inspection to determine how well their work is being done. Systematic examination of pupils upon specified subjects is not followed. The State Authority exercises its power to examine schools, to the maintenance of which it does not contribute, as well as to inspect the others to ascertain that the funds which it does contribute are used for the purpose for which they are designated and that the work is carried on efficiently.

The management of the Continuation Schools in the larger towns is in the hands of special Boards of officials, who represent the employers, employees and educators. They have the general direction of the school work. Each school has its own Director, and when there is a system of schools in the place there is a Director of the system who is often a member of the Managing Board.

The general custom is to have this Board for the Continuation Schools distinct from the Board controlling general Elementary and Secondary Schools. Sometimes each division of the Continuation Schools has an Advisory Committee of persons who are intimately identified with the particular trade which it represents. In this way the employers and workers alike become interested and help to make the schools efficient and practical. The growth of confidence in the school is the result.

The several States, in which the eleven Technical High Schools are located, accept the full responsibility for their maintenance. The Technical High Schools, in the German system, correspond to Technical Colleges or Technical Universities in the United Kingdom and Canada.

General Principles Governing the Instruction.

Throughout Germany the general principle is now accepted that the instruction in the Continuation Classes is most advantageous when grouped around the callings or occupations of the pupils. In those cities where the Continuation Schools are not provided at all, or are only provided meagrely, with workshops, tools or machinery, there is less close connection with the trades and industries by means of expert advisers or committees; and there are fewer of the teachers who have had practical experience in the workshops and factories.

The Continuation Schools are not only for those who are serving their apprenticeship and are between the ages of fourteen and eighteen. They also serve as schools for journeymen and even for the masters. These advanced Continuation Schools exist in connection with the school system of all the great cities of Germany. They enable young people, who are unable to give up their trade and devote their whole time to attendance at a Technical School, to go as far as their ability and the time at their disposal can carry them.

The Mittelschule or Technikum might be called a continuation of the Continuation School. The former are institutions where skilled workmen, who have already taken advantage of the Continuation Classes and had a good deal of experience in shop practice, can receive training and knowledge necessary to

qualify them for positions as foremen, superintendents, etc. In Prussia these Secondary Technical Schools are carried on in connection with the Continuation Schools. In Bavaria they are carried on in connection with the Realschulen. In the latter case the pupil who takes the two year course after the Realschule may obtain admission to the Technical High School or he may take the third year in special work on the subjects for the particular occupation he intends to follow.

In the Continuation Schools or Classes, and in the Lower Technical Schools, the object of using materials, tools and machines is to prevent the pupils from becoming mechanical in doing their work. The practice and experience in school with tools and machines gives them an all-round training so that they may know something of each of the processes relating to their trade and be ready to become experts in any one of these by long or short practice.

In the Middle Technical and Technical High Schools (Technical Colleges) the work is chiefly of an intellectual character intended to fit men for positions of leadership. In but few cases does manual work in them occupy any considerable portion of the time.

The Technical High Schools are schools of technology and not schools of technique for manual work with machines or for handicrafts. They are the institutions of the highest grade and their aim is to train the students to independent thought and ability in their technical affairs. The students are taught and trained constantly to take a wide view in all their considerations and in all their doings. It is recognised that a failure in any undertaking shows that something had been overlooked or neglected. On the other hand if all the conditions have been taken into consideration, according to their importance, successful planning and satisfactory accomplishment may be expected.

In the Technical High Schools the workshop practice is not intended to teach the students a trade or to make them expert machinists or experts in any handicraft or tool or machine operation. The purpose is to give the students an adequate knowledge of materials, tools, machines, working methods and to make them acquainted with the workmen, their point of view and the conditions under which they work. All this is for the purpose of giving them clear ideas as to the conditions, means and limitations of manufacturing and workmanship, the workmen's attitude and capacity and of management of a factory.

Features of the Munich System.

The information furnished by Dr. Kerschensteiner on the organization and planning of the compulsory Technical Continuation Schools for boys in Munich is so clear, suggestive and illuminating that it is given at length in another place.

The features of the school system of Munich which stand out with lessons of value to Canada are:—

1. The effort to arrange courses, in the two final years of the public Elementary Schools, of such a character and in such a way that the children will be prepared

for going on with their education in the Continuation Classes, and disposed to seek willingly to derive benefit from classes in school after they have gone to work.

2. The effort to adapt the Continuation Classes to the needs of all the population, especially those between 14 and 18 years of age, and, at the same time, to adapt the work of the Continuation Classes to the needs of the various industries and occupations.

Every care is taken that there shall be close correlation of all the instruction in mathematics, computation, language, etc., with the particular occupation of the student. For example, boys from no fewer than 47 different trades are put into different classes in order to provide for this co-ordination. The occupation is made the pivot around which, and through which, the other studies are made to bear on the pupil. At the same time regard is had to broadening the interests and the sympathies of the pupil as well as widening the range of his knowledge and skill. One object of the compulsory Continuation School is to give the pupils an all-round training so that they shall know something of each of the processes relating to their occupation and as assistants can be put with advantage to anything in the trade itself.

3. The ample provision of schools wherein young men who have completed their attendance at the Continuation Classes and completed their apprenticeship can gain wider knowledge and experience bearing upon their own trade or occupation. These schools widen the worker's range of knowledge of principles, materials, tools and machines and also give him an opportunity to increase his ability and skill by the use of tools, materials and machines. Such workmen are encouraged to complete their masterpieces in connection with one of these schools. The halls and other places are full of specimens of superb workmanship. The boys attending the Continuation Classes have opportunities to see these, in fact cannot avoid seeing them, as in many cases the Workmasters Schools are held in the same building as the Continuation Classes. The stimulating effect of these pieces of workmanship with their content of art, skill, and beauty is subtle and incalculable.

Financial Support.

There is almost invariably some participation by the State in the support of schools which are primarily for local service and the immediate benefit of those who will be employed in the locality. Where a school purposely serves an area of population larger than the town where it is located, it is likely to have owed its establishment and a large part of its maintenance to the action of the State or some business, trade or philanthropic organization. When the State and City combine in meeting the expenses of such institutions the State usually takes the larger share of the burden particularly for the highest institutions.

The benefits which come directly to the individual, to the City and to the State are not separable. Moreover, whatever is of direct and real benefit to the community is thereby of advantage to the State, and therefore to some extent the State is warranted in meeting part of the cost.

It is recognized that the lack of suitable training and of Technical Education has held back the economic development of entire districts and of considerable industries. It is also true that some communities which derive immediate and direct benefit from Technical Education are unable to assume or bear the whole burden of costs themselves. Rather than have the community go unserved in this way, the State comes to its assistance. No uniform rule is followed in settling the amount to be contributed respectively by the local community and State.

The representatives of the industries of the place, either through a Guild or Association or otherwise, often contribute to the maintenance. The reason for this lies in the obvious and immediate advantage to the industry from a supply of thoroughly trained and competent workers.

As a rule, for all except the institutions of the highest grade which serve the State as a whole, the local communities provide the buildings and maintain them.

As compared with the expenses of general education, the costs are higher in the case of Industrial Training and Technical Education. The buildings and equipment are more expensive for the number of pupils they can accommodate as is also the maintenance of the plant up to requirements. Competent teachers who are in touch with industry, and at the same time able to teach acceptably, although not scarce, command relatively high remuneration. Provision is now being made to grant such teachers pensions; and in case of death provisions for wife and family.

C: IN THE UNITED STATES.

The organization of Industrial Training and Technical Education in the United States differs widely in the several States in respect to the degree of control exercised by the State and the amount of financial support which it gives. In a recent publication* by Mr. C. A. Prosser, Secretary of the National Society for the Promotion of Industrial Education, some information on this subject has been given. The following facts are quoted from it. It presents a brief summary of important points, in this connection, which are to be found in the Commission's Report of the enquiry in the United States.

Maintenance by State and Community.

The entire cost of the public trade schools of Connecticut is met from the treasury of that commonwealth. In Massachusetts the local community builds and equips the plant and the state pays one-half the operating expenses. This is substantially true in Wisconsin as well. One-half of the amount expended by the local authorities is contributed by New Jersey, while New York gives the town or city five hundred dollars for the first teacher of practical work who is employed and two hundred and fifty dollars for each teacher of the same character who is added to the teaching force. In recent legislation the tendency is toward a state system which will require the local community to establish the school at its own expense, meet all the operating expenses and receive from the commonwealth one-half the cost of maintenance if the work is approved by the State Board of Control.

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* "Vocational Education Legislation of 1910-11," published by American Political Science Review, November, 1912.

Character of the Managing Authority.

Everywhere there is a growing recognition of the need of close co-operation between the schoolmaster and the man of affairs in carrying on practical education in this country. Three means of securing the participation of laymen are possible, namely:—by lay representation on state boards of control, by lay representation on local boards of control, and by advisory committees surrounding the principals and teachers of vocational schools, composed of employers and employees who have had practical and successful experience in the kind of training which the schools give. Up to this time state boards of education and local school committees have not been chosen with the idea of their special fitness to deal with the problems of practical education. Hence the attempt to secure in recent legislation a larger helpful influence from the practical man in the work of schools fitting men and women for the duties of home and shop and farm.

Connecticut.—The laws of the different states vary greatly in this matter. Connecticut has direct control of its trade schools by the State Board of Education, which also has charge of general education in that commonwealth. A majority of its members are lay rather than professional. Most of them have not been selected for their special fitness for dealing with the task of vocational education. There is no local board of control for the schocol and no local advisory committee surrounding it.

Massachusetts.—The State Board of Education in Massachusetts is responsible for the administration of vocational education, as well as general education. Its lay members have not in general been selected with any special reference to their experience and fitness to deal with problems of vocational education. The local boards of control for the state-aided schools of that commonwealth may be either the regular school committee of the community or a separate board of trustees chosen for their special fitness in dealing with the task; usually the former administrates the school. The Act of 1911 requires all schools in the state asking for approval and aid to have advisory committees composed of members representing local trade industries and occupations whose duty it shall be to counsel with and advise the school officials in the discharge of their duties.

New York.—There is no state board, either professional or lay, in New York. The administration of the state-aided vocational schools is entirely in the hands of the Commissioner of Education and his assistants. The schools are managed locally by the regular school committee. The law requires the appointment of advisory boards similar to those of Massachusetts.

New Jersey.—In New Jersey the State Board of Education, which is almost entirely a lay-body, has little control over the vocational schools. Usually the school is controlled by the local Board of Trustees, a lay-body, consisting of the Governor, Mayor and eight others appointed by the Governor. No advisory committees are authorized or required under the law.

Wisconsin.—In the recent laws of Wisconsin, we find the most complete assertion of lay interest in the country. The part-time and continuation schools of the State and practically all other vocational training has been placed in the hands of the State Industrial Commission, made up largely of laymen and having no responsibility for the general education of the State. In the cities and towns, local boards of control, entirely independent of the regular school committee, are provided for and given the duty and power of carrying on the part-time and continuation schools. There is every indication that the legislation of the future will give a larger recognition to the place of the layman in the State systems of vocational training which cannot help but have its effect upon the practice of the regular schools in this respect.

Pronouncement by National Education Association.

The following is taken from the Report of the National Education Association on *The Place of Industries in Public Education.*

Organization and Administration.

Vocational education under private and philanthropic auspices is commonly organized in separate and specialized schools. When it becomes a part of public education, several schemes of organization and administration become possible.

A. The vocational school may be completely separated in the administration and support. This type is illustrated in certain state schools, which have their own boards, and to which authorities make assignments of funds. The California Polytechnic has thus a completely separate organization. At times it has been proposed that a separate state machinery of administration was necessary to initiate and carry on vocational education. It is argued in support of this position that the administration of the newer type of education requires a different point of view, and different estimates of educational values from those which ordinarily prevail. Also that the degrees of affiliation with business and practical conditions is such as to be most effectively accomplished by having separate governing boards and specially provided funds. There are a variety of reasons why it may be expected that the state rather than the locality will contribute more to this form of education than to ordinary forms, the chief argument being found in the mobility of labor.

B. The vocational education may be carried on by the regular educational authorities, but in distinctly separate schools, under principals or directors who pursue the distinctly vocational aim. Hitherto it has been hard to accomplish this form of organization in such a way as to produce distinctly vocational education. Only part of the work has been vocational in character, the aims of liberal education being pursued to the relative exclusion of others. But the intermediate schools now being organized in New York, under control of state and local departments of education, provide a variety of checks by which the vocational character of the school can be preserved. These are chiefly: (*a*) state inspection by a special agent of the state education department, (*b*) the provision that the vocational work must be carried on by a separate organization, and (*c*) the requirement that the shop teachers shall be men with practical training and experience in the industries.

C. It has often been proposed that vocational education should be organized simply as a phase of a complete educational scheme, much as manual training is now part of the general program. Various suggestions along this line have been made: (*a*) That half of each day be given to work of the academic character found in the upper grades, and half to shopwork, household arts, etc.; or (*b*) that the ordinary school day be kept for its present purposes, and that the hours from three to five and perhaps Saturday forenoon be devoted to practical work; (*c*) the tendency where vacation schools have been established to use the regular school buildings and equipment during the summer months for practical or vocational work.

Regarding these plans, it has been urged that in the present temper of schoolmen the vocational work could hardly be expected to meet with sufficient sympathy and support, and that the traditional subjects, because they lend themselves so effectively to ordinary methods of teaching, would displace the vocational work. Probably this will not always be the case; when vocational training shall have established its own methods and content it may be able to hold its own. Furthermore, programs like the above seem better adapted to elementary vocational work when that shall have been established. In the meantime, much may be said in favor of having the intermediate industrial-arts school under its own roof, and working completely under its own program. There is thus provided an industrial atmosphere, and such a school may be expected to develop its own social spirit. It may require time and tact to prevent the growth of obnoxious class distinctions between the patrons of two different kinds of schools, but this is a problem that has already been met and solved in the universities of America, and in the introduction of scientific and commercial studies into secondary education.

SECTION 2: THE CORRELATION OF COURSES OF STUDY TO OCCUPATIONS.

Not much real research work or experimental work has yet been done in organizing courses of study entirely suited to the needs of individuals following different occupations. One of the services which this Report may perform for educators will be through putting before them types, and in some cases details, of courses of study which have been worked out under conditions somewhat similar in many respects to those which prevail in Canada. Throughout the preparation of the parts of the Report that deal with courses of study, that aim has constantly been kept in mind.

The Experience of Munich.

The case in which the most careful investigation was made of the results of experience in Courses of Study for Continuation Industrial Schools was that at Munich. In consequence, the courses of study in detail for two types of classes, viz. Schools for Machine and Metal Workers and Schools for the Building Trades, have been presented in full in the Report on Germany. A brief summary of what has been done there is presented in the two following paragraphs.

In Vocational Education an attempt is being made generally to use practical training in close relation to the occupation as the first form of instruction, and afterwards to use text-books to supplement that. The interest and goodwill of the pupils are aroused and maintained by this means better than by exclusive or predominating use of text-books at the beginning.

At Munich the Courses of Study for the Continuation Classes were practically re-cast into their present form, which was adopted in 1910. The Courses of Study which had been followed up to that time were given thorough examination and discussion by all the teachers and instructors of the different industrial schools. Experience as to the fitness of the Courses of Study had been obtained during the previous nine years. Forty-six of these conferences were held under the supervision of School Inspector Schmid, under whose immediate charge was this part of the school work, of Munich. The Courses of Study were then submitted to and studied in forty-six further conferences under the immediate supervision of Dr. Kerschensteiner. In these conferences the masters and journeymen of all the individual trades took part, and School Inspector Schmid and the Directors and heads of departments of the various industrial schools were present. Out of the fulness of discussion thus carried on, the present Courses of Study were shaped, and they have the approval of teachers, employers and employees.

From all the Commission could learn, the general verdict in Germany agreed with that of Munich, viz., that Courses of Study which did not have a direct bearing upon, and an easily recognized connection with and value to, the occupations of the pupils did not accomplish what was expected of them.

Instances from Massachusetts.

An illustration of this principle is to be found in the statements of the experience of the Principal of the Industrial School at Worcester, Mass. He found an unwillingness on the part of the men to come for any Course unless it had to them a definite and direct bearing on their occupation. In this connection the experience of the teacher of Mathematics at the Co-operative High School at Fitchburg, Mass., may be cited. He was a graduate of McGill University. During the week in which the pupils attended his classes, he taught the Mathematics which had a direct bearing upon processes with which the pupils were concerned at that particular time in the shops where they worked. That was done regardless of the sequence of the parts of the subjects in the text books. Then during the last, that is the fourth, year of the Course, he reviewed the subject as a whole and correlated with the students the different parts which might have been overlooked under the method which he followed in giving the pupils practice in arithmetic which affected their interests at the particular time.

Statement by the National Education Association.

On the question of the organization of subject-matter and Courses the National Education Association presented its conclusions in its Report on the

Place of Industries in Public Education. The following extracts from that Report present the case with such clearness and comprehensiveness that they are introduced here.

ORGANIZATION OF SUBJECT-MATTER.—It has already been made clear that the character of the subject-matter will vary according to predominant industries for which preparation is being made, and therefore according to locality. Under the discussion of the main groups or related industries, suggestions were tentatively made as to organization of subject-matter. The following summaries, though involving some repetition, are submitted for the sake of further clearness:

A. Concrete work.—Recalling that by this is meant all work with materials in a manipulative way, including analysis of machines, the following principles seem valid:

1. The concrete work should result in products which are usable and under favorable conditions salable. It will be noted that this principle is opposed to the one commonly employed in technical and manual training, where the emphasis is on the exercise, or isolated-type exercise. It is true that in some successful industrial education today, only exercises are dealt with; but almost without exception these schools have highly selected groups of workers. There appear to be strong pedagogic reasons for the acceptance of the above principle in the case of youths from fourteen to sixteen who are finding themselves in an industrial sense.

2. While in the earlier stages of industrial-arts training, attention will be given largely to quality of output, there will be stages in the course when, through actual experience, the significance of quantity should become understood. That is, commercial conditions should be sufficiently reproduced that an abiding appreciation of the importance of rate of work shall be developed. Some schools producing usable products accomplish this by keeping an account of each worker's contribution, and a computation of its probable or actual market value.

B. Technical work.—Already emphasis has been laid on the pedagogical desirablity of having technical work—mathematics, drawing and art, sciences, laboratory manipulation, and even English on the formal or expressive side—grow out of and manifest its relations to the concrete work, in the intermediate stages of industrial-arts training. If this point of view is correct, it is evident that we may expect the evolution of more than one kind of shop mathematics, shop chemistry, shop study of physics, etc. The development of this principle will be persistently opposed by those who believe that the pedagogical order toward mastery is through the subject studied first in its pure form. From this point of view, mathematics must be studied as pure algebra, geometry, etc., first, then its applications; a course in general chemistry must precede applied chemistry in dyeing, foodstuffs, etc.

Experience thus far seems to demonstrate that when the available time of pupils here under consideration is taken into account, as well as the importance of securing vital interest in such studies the most effective method of approach in the technical studies is along the lines of their application, with comparatively short periods of time devoted to the study of pure forms.

There can be little doubt that all vocational education is today, in this respect, affected by certain generalizations which emanate from the trade schools connected with wood and iron work. Mechanical drawing, for example, figures largely in these industries, at least so far as the ability to interpret drawing is concerned; but there may be entire groups of industries in which mechanical drawing has little or no place as a vocational subject. Similarly with regard to certain sciences; chemistry may be of most fundamental importance in some groups of industries, and quite superfluous in others.

C. General vocational studies.—Around each group of industries may be gathered historical, geographical, economic, and sociological materials which, while not conferring immediate efficiency, do undoubtedly give vocational intelligence and vocational ideals. The evolution of any industry, or group of industries, may be studied (history); the present distribution of such industry over the world, the varying conditions found, the new movement in its sources, its materials, its machinery, its social importance, etc. (geography); rates of compensation, union conditions, relations between employees and employers, competition, effects of immigration, industrial hygiene, etc. (economic)—all these may be made appropriate objects of reading and study. To this group may be added, in certain lines, studies in the kind of English which has vocational significance.

The above program does not preclude the development in these schools of studies that frankly have no vocational significance. English literature, music, art, history, science, may, if time permits, be studied as cultural subjects, as resources against time of leisure, or, as sometimes denominated, avocational subjects. When we have once settled the program of vocational studies, we may find time to introduce others which are thus frankly non-vocational Under this head might be placed social or civic studies which contribute to the making of the useful citizen. But for the present it seems that civic studies, sufficient for the type of youth here under consideration, can best be given in connection with vocational pursuits themselves, and hence in the division "general vocational studies."

SECTION 3: THE INFLUENCE OF TEXT-BOOKS AND EXAMINATIONS.

Right and Wrong Use of Text-Books.

The practice of using a text-book to get up a subject in such a way as to be able to pass a written examination on questions based upon the statements contained in it is of doubtful value. Later on in life the student may be able to avail himself of some of the information thus acquired, but the injury to the student comes from getting him into the habit of supposing that because he knows what is said about the subject in the book, he has a real knowledge of it and ability to manage processes or solve problems. Text-books have the greatest value when they are used to supplement knowledge and ability gained by the student from his observation, experiments and experience. They supplement the comparatively small amount of knowledge which any young person can acquire by his own observation and work.

Text-books are also useful as supplementary for the student who can interpret what is stated in them by the increasing amount of knowledge which he has made his own through his experience. Text-books also render valuable service in putting before the student a model for arrangement in presenting a subject or in making a report upon what he has done.

Books for Correspondence-Study Courses.

In the testimony offered to the Commission during its enquiry in Canada, much favorable comment was made on the character of the text-books prepared for the International Correspondence Schools, with headquarters at Scranton, Pa. The favorable comment was usually based on the fact that the arrangement of the subject-matter was mainly in the order of the usual progress of the learner of a trade in acquiring ability in that trade. The plan of preparation in the main was reported to be as follows:—When a course was to be offered on a particular subject or branch of work, special writers prepared text-books. These were not constructed in such a way as to present the subject as a whole, in the order of its logical sequence of treatment, for the purpose of giving a full knowledge of such a subject as botany, mechanics, chemistry, etc. The matter was arranged in the order in which it would be come to, or be required by, the worker in learning or carrying on his occupation.

Value of Personal Effort by Pupil.

The work undertaken by the student and the spirit in which it is undertaken are of the first importance. These depend a good deal upon the teacher. The teacher is the prime factor in the school when he arranges conditions and directs efforts for the natural growth in power and knowledge by the pupil. The growth

comes from the effort the pupil puts forth and not from the work done by the teacher for him. The text-book implies a passive and receptive attitude of mind, which should be followed by active, expressive, constructive effort. Text-books, appliances, apparatus, machines, tools and materials should all minister to the mental and physical activity of the pupil in acquiring ability, good habits and good will. He can apply his efforts to more advantage when the courses, the text-books and the equipment are all of the right sort. However, a multiplicity of equipment all arranged, materials ready for use and lesson in the text-book duly designated, may prevent the student from exercising that measure of judgment, comparison and initiative which are all-important in Industrial Training and Technical Education.

The Influence of Examinations.

In classes and schools of Industrial Training and Technical Education it is necessary to get away from the established traditions as to the value of examinations. Courses of Study have been often framed directly for the purpose of enabling a student to pass a certain examination, appointed or dominated by some higher or different education authority which exists for a purpose other than the training of the bulk of the students in the lower schools for their life work.

Power to Remember vs. Power to Do.

The kinds of examinations which have been set, as a rule, have been framed and used chiefly to test the knowledge of the candidate in respect to what he remembers of what he has read or been told. An examination which, in the major part, is a test of the memory of the student for information which he has accepted wholly on authority, is a poor means of discovering or determining the ability of the pupil to go on, or the amount of real knowledge he has acquired, or the power which he has developed by his previous education.

In Germany the plan usually followed is to require successful attendance for a given length of time at a school of a certain kind. The fact that the pupil attended such a school and took the courses to the satisfaction of the teacher is the best evidence of his having attained a certain amount of knowledge, intelligence and ability in regard to the subjects taught there. It is also evidence of the ground he has covered in regard to the subjects.

When the examination is chiefly a test of memory, the state of health of the candidate at the particular time has a good deal to do with the way in which he handles the questions. The making the most of the knowledge one has, and the power one has at examination time, is also to a large extent a question of temperament. Some candidates are so much disturbed by the prospect of an examination and examination conditions that they do not do themselves justice. In this connection it might be said that the temperament which lets a candidate become unfitted under special circumstances of examination would also do the same thing for him in practical life. However, if that be the case,

the inference should be that he needs training to remedy the defect, and he may be abundantly ready to receive the training although failure in the examination might prevent him being accepted as a pupil.

The Opinion of Dr. Putman.

The following are extracts from a communication from Dr. J. H. Putman, Inspector of Public Schools, to the Public School Board of Ottawa and the teachers.

> The system of making promotions depend on a formal written examination encourages cramming, excessive memorizing, and superficial teaching at the expense of the development of power. It tends to throw on the examination a responsibility which should rest on the teacher —the responsibility of promoting her class, defectives and irregular attendants excepted. It makes a snap judgment, expressed in marks and percentages, and on which a year of the child's life depends, of more value in estimating the child's powers than the teacher's intimate knowledge of him. It exposes the child to the whims of examiners—both of those who set the papers and of those who examine them—and to the injustice of having to undergo this test when he may be unwell or in a state of excitement, and fright amounting sometimes almost to panic. It tends to shift the centre of gravity of the school away from teaching and conduct—its legitimate fields of action—to a preparation for examinations, at best a minor or merely incidental part of the work of the school.

Three of the important suggestions to teachers by Inspector Putman are:

"That a pupil's fitness for promotion should be decided mainly by the teacher's estimate of him as formed from his daily work in the class and from the results of the written tests given from time to time.

"That the pupil's age should always be considered, and the older he is, the greater is his claim for promotion.

"That any written tests given be given without notice to pupils, and at such intervals that no whole day or week be set apart for examination purposes."

Recognition of Intellectual Development Through Work.

When the requirement of previous experience in practical work is laid down, it is evidently for the purpose of ensuring that the student has, in the development of power to do things, acquired for the purposes of his further education an equivalent of such knowledge as he would obtain from books and from reading for the purpose of going on to the study of language or literature or history, or some other book subject. The fact that a student has had prolonged mental training on subjects or problems or work, gives him a certain capacity and qualification for taking up new subjects or new kinds of work, as well as for going on with the old ones.

It is not suggested that examinations have no place or use in connection with admissions to classes or schools for Industrial Training and Technical Education, or have no value in the course of the student's progress after he has been admitted. But what is to be guarded against is the menace of examinations in so far as they direct the attention of the pupil and the school to seek first a successful pass, in the fond hope that other things will be added. A valid use of examinations for admission to any class or school should take cog-

nizance of the following: (1) that the pupil shall be old enough to be at a stage of growth and intellectual development and bodily strength which will enable him to profit by the courses and the training which the class or school offers; (2) that he shall have sufficient knowledge, training and experience to be able to take up and go on with the course and its work without undue loss of time; (3) that he shall, in respect of his content of knowledge, mentality and method of work, be on nearly the same level as the others in the class.

SECTION 4: METHODS OF INSTRUCTION.

No matter how the Course of Study may be arranged or what subjects may be included in it, the methods of instruction that can be employed to advantage depend upon the particular object to be accomplished through the work to be done. The kind of work to be done will depend upon the trade, occupation or career for which the student is being prepared.

In the different schools of the several countries visited the method or methods of instruction may be said to follow one of two general lines, or to follow both, with sometimes more stress or emphasis upon the one than the other. On the one line the chief effort is directed to the acquisition of knowledge concerning the principles and theories that are connected with the trade or occupation; on the other the main part of the attention is given to gaining a wider knowledge of, and a great skill in, the use of materials, tools and machines. In many cases the time of the pupil is divided between these two, and because of that division there is increased progress along both.

In the kind of Industrial Training and Technical Education which follows immediately after the Elementary School, the general opinion seems to be that pupils make more progress and get more real benefit when they receive instruction in theory close in point of time to the practical work, whereby the theories may be put to the proof or put into practice, and whereby principles may be illustrated or demonstrated.

Maintaining the Interest of Pupils.

Any method to be successful must be able to enlist and retain the interest of the pupil. The mood of mind in which the pupil comes to his work, as well as the spirit in which he carries it on, has much to do with the good he gets out of it and with the progress he makes in ability to turn out good work.

The gulf between memorized information and real knowledge is both deep and wide. For example, dramatic representation by a pupil of the information acquired often turns it into real knowledge. Among the things which young people instinctively desire to do is to act, in the dramatic sense. The use of that method of instruction in Industrial Training and Technical Education is practicable, in spirit if not in form, when the pupils observe and participate in some action or series of actions with any dramatic quality in them, even in the use of materials.

It has been said that a poor method in the hands of a good teacher is better than a good method with a poor teacher. Like some other rotund sayings, that does not convey a statement of much, if any, ascertained truth.

One of the essential qualifications of a teacher is ability to give such a setting to the activity of the pupil, and such direction to the work, that his interest will be awakened and sustained. Sometimes it becomes necessary for the teacher to supplement the formal method of instruction by the personal touch that arouses and sustains the interest. It is better when the kind of work to be done, as arranged for by the teacher, is in itself sufficient to awaken, sustain and increase the interest of the pupil.

The continuation of interest depends upon the recognition of a definite purpose by the student. Purposive work, especially if the object is one greatly desired by the pupil himself, is the kind that has highest educational value. In the judgment of educators that applies from the earliest years onward.

Towards Knowledge, Ability and Habits.

Another point of importance is that the method or methods followed should be such as enable the student to use as much of his previous knowledge and skill as practicable. Growth in knowledge proceeds from the known to the unknown, and the teacher will nourish best who bears that in mind.

The methods should also be adapted to the development of the particular kind of knowledge, intelligence, skill and managing ability which will be called for in the occupation of the pupil. It is not known that ability to do one thing well implies that that ability will flow over and be available to the student to do other things of a different sort also well.

The methods followed should have regard also to the formation of habits as well as to the development of power to perform acts or a series of acts. It is possible to pursue certain studies under the conscious and compelling direction of authority without advancing the education of the pupil's mind and will.

When habits of the right sort are well formed, some powers of the body, mind and spirit are thereby released for application to other and higher tasks.

The Method of Approach.

Mention has already been made to the effect that an important function of the teacher is to indicate the direction in which the pupil should work and not to give him minute directions as to how he should do the work. The order in which the subject or project is presented to the attention of the pupil may constitute an important part of the method of the teacher. In this connection it is well to bear in mind that the logical sequence, which belongs to a subject when it is being studied by a mature mind, would not be suitable for the presentation of the subject to young persons of very limited range of experience and with mental powers undeveloped. Certainly there have been much waste of time, lack of interest, discontent and disappointment from the teaching of science in schools where the science subject has been presented or studied as

arranged for by those who had written text-books presenting the subject in its logical sequence without regard to the sequence of growth and power in pupils to understand it. In this connection attention is directed to the memorandum by Dr. Lynde on Methods of Teaching Science (see page 124). The principles enunciated there apply with equal force to methods of training towards efficiency in industrial undertakings and technical knowledge.

Since most teachers teach as they were taught and not as they have been told to teach, it is important that the methods of the teachers who train Instructors for Industrial Training and Technical Education should be of the very best. In Germany and also in England the teachers for the practical workshop side are in most case recruited from those who have been excellent students in the Continuation School or Classes and have had practical experience in the works. When such persons have any aptness for teaching, they adopt the methods which they found to be most helpful from teachers under whom they worked.

Some of the methods which have been found highly successful in teaching and training in Drawing, and which are radically different from those which used to prevail wholly, and still prevail quite generally in Elementary and Secondary Schools, are so fully illustrative of the main features of what was observed and learned by the Commission regarding successful methods of instruction in Industrial Training and Technical Education that an outline of them is presented here.

DRAWING, DESIGN AND ART.

Reference has been made to the apparently marvellous results which were found from the method of teaching Drawing to elementary pupils in a village or rural school at Sompting in England. That is given in somewhat full detail in the Report at page 298. Contrary to ordinary expectation and accepted theory of what is required in teachers generally, the children in the village school learnt to draw well without the supervision or assistance of teachers who were themselves able to draw. The distinguishing features of the lessons there were that the children were directed to apply themselves in observing, obtaining impressions and then representing these impressions in form and colour according to their natural powers. The function of the teacher was to guide the child to criticize its own work and to further direct it to self-effort and self-realization through repeated attempts to make the drawing represent the thing as the pupil saw it and not as the pupil thought the teacher would like to have the picture look.

Clear "Mental Pictures" Come First.

Drawing has been regarded as a special subject to be taught by special teachers. The best authorities indicate that power to draw should be cultivated and developed from earliest years and be considered integrally part of Elementary Education in the same class with the arts of Reading, Writing and Computing. When the natural desire and ability to make pictures has been properly culti-

vated and developed it is easy to direct the pupil through such a course as will enable him or her to represent in form or colours what he sees or has seen.

This art in the Elementary and Secondary Schools should be considered first as a useful one for the purpose of communicating and recording impressions and recording images of situations which can be pictured in the mind. The authorities agree that attention should be given chiefly to training the pupil to observe closely and clearly in such a way that the mental image will be true to the thing observed and one that the memory can recall.

Concurrently with that a good deal of practice should be given to enable the pupil to control the instruments or tools by which the drawing is to be produced. That facility can best be acquired by much practice in actual drawing from things observed and then making comparisons of the drawing with the thing itself.

Much instruction or suggestion as to what to look for, what lines to make first, and other matters of technique, had better be left until the pupil has had considerable experience in discovering how nearly he can make his representations on paper look like the things which he has seen. After this practice the pupil will be ready to profit by instruction and training in matters of technique.

The following is taken from a Bulletin published by the Agricultural Education Committee of England, *Nature Knowledge, its Progress and Interpretation*, by Henry Boult, author of "Nature Study with Brush Work Diagrams."

If the introduction of brushwork means bringing into our schools an ally that will assist us in training the children to observe correctly and to memorize what they see, then I am strongly of opinion that it should have an important place in our scheme of "nature-study," but on one condition—the work of the scholars should be judged not from the standpoint of artistic merit, but from that of accuracy in delineating and colouring those details of the object which the teacher desires to impress on the minds of the pupils. It has been said by some who advocate pattern brush-drawing, that it is too difficult a task for children to copy, in colours, natural objects. Our experience has proved this to be an entirely incorrect statement. If the start is made in Standard V. and upwards with the simplest natural forms—a shoot in Winter or Spring, a leaf in Summer, or a seed pod in Autumn—it will be easy to lead the class by carefully-graduated steps to the more difficult forms. We began last year, in the month of February, by giving about half-a-dozen lessons in "blob" and "line" work, in order to give facility of manipulation with the brush. In March, shoots of the lime with undeveloped buds were handed out, and the results were so encouraging that we arranged to continue the work as a study in bud position. Bud development into leaf, flower and fruit followed; and by the end of June an exhibit of brushwork from natural objects was prepared by the scholars for the Nature-Study Exhibition held in London last year, comprising illustrations of bud position; development of bud into leaf, flower and fruit; bulb and corm development; fruit spurs; fertilization dodges; and stages of insect and aquatic life. Some of the best work was done by girls, who, unlike the boys, had received no previous instruction in drawing. This exhibit was awarded a bronze medal. Lest some may think such results can only be expected under exceptional circumstances, allow me to say, for their encouragement, the staff is only what might be expected in a rural school, and only one has a drawing certificate—that known as the old "D." This should be a sufficient answer to the statement that such exercises are impracticable.

Brushwork, carried out on these lines, will be found to give added interest to the "nature-study." The children will watch more keenly for developments of the objects under observation if they know they may have to copy them; and the act of reproducing the shape and colours will lead to a greater concentration of mental effort on the part of the child.

Little Attention to Technique at First.

Drawings that are strictly accurate and well finished should not be looked for from beginners. It does not appear to be profitable to spend time in trying to do work perfect in technique, etc., until considerable facility has been developed in making sketches and simple pictures from objects observed. This

applies also to making drawings for articles to be made by the pupil himself. Stress on accuracy and precision of drawing should come later, after the pupil has ability to easily make a rough sketch with the dimensions marked on it. In actual practice even a workman seldom has occasion to make a drawing that is exact in scale and perfect in detail. A sketch which represents the outline, the relative position of the parts with reasonable clearness, and has the dimensions marked on it leaves the pupil time for other work. If the course is for the purpose of making a finished draughtsman, more care should be devoted to the development of ability in the making of drawings for their own sakes.

The practice in a good many of the European schools is to have pupils make freehand drawings with the dimensions marked on, and afterwards make reasonably accurate drawings to scale with the dimensions marked on.

It Disciplines the Eye and Hand.

While Drawing is fundamental to all industrial training, the use of drawings by workmen is required in only a few occupations or industries. Many skilled craftsmen have almost no occasion to make drawings, and little occasion to read drawings. As for example those engaged in the occupations for the production and preparation of foods, those engaged in the chemical industries, those engaged in the boot and shoe industries, those engaged in the clothing industries, those engaged in the agricultural, mining and fishery industries. Ability to draw well and read drawings easily is of the highest technical value in the machinery trades and the building trades.

However, Drawing should be part of an individual's equipment as Writing is. It has so many uses apart from the application to the particular occupation and it trains the powers of observation so thoroughly that it has a high value as a disciplinary subject. One of the benefits is the making sure by practice of the co-operation of a practised eye and a practised hand. In this sense it is well to bear in mind that perception and expression are not two faculties but one; each is the very counterpart and correlate, each is the very life and soul of the other.

For Young Children.

The authorities with whom the Commission discussed this matter in other countries, and who have most knowledge and experience, believe that Drawing is one of the most valuable elements in the education of even the very young. In only comparatively few schools has it yet been given its due position. It is still regarded by parents and teachers as an extra subject, an educational ornament, accomplishment or luxury, of little practical use except for the few who intend to become artists. On the other hand, where children are given opportunity and guidance towards representing their mental images in Drawing, the lesson is a delight, a discipline and a benefit to pupils and teachers.

While there is a good deal of difference in the aptitudes of different children, practically every child possesses the power to draw, a power that only requires educating to become both useful and delightful.

At Munich the objects sought by the teaching of Drawing in Continuation Classes as described in the lesson plan published in 1910, are as follows:—

The development of the power of obtaining knowledge by means of the eyes, of the power to give expression graphically to this knowledge, the promotion of the habit of observation and of æsthetic feeling. An hour a week is given to drawing in all classes from the first, that is, the lowest, to the fourth; three hours for boys and two for girls in the fifth, sixth, and seventh; and four for boys, and two for girls, in the eighth. Drawing is regarded as having all the importance of many different kinds of language. It is not treated as a separate subject, but as one which is almost as much inter-mixed, as is speech, with other subjects.

Instruction in handwork aims at the development of accurate elementary skill in the use of the hands through the execution of simple work in wood and iron. As far as possible, all the objects which are necessary for the courses of geometry are to be made in the school, and also those which are needed for chemical and physical experiments. For this purpose the class teacher and the giver of technical instruction must take counsel together.

Drawing in Relation to Design.

In the Kindergarten at Hawick the pupils weaving with the strips of paper were directed to examine the designs they made, to see whether the design or pattern could actually be woven in a loom. When even such young children were doing their plaiting or weaving for the purpose of producing a design which could be repeated in products for sale, their interest was greatly increased and their attention and imagination were led on towards further effort and better work. The utilitarian is not the major motive with children, but it supplies an incentive which should not be overlooked. It supplies an incentive all the stronger to young men and women who are preparing for their vocation.

In the collection of Industrial Art brought by our Commission from Glasgow there is a valuable feature which might easily be introduced into any school, and yet it contains the germ of three separate arts and crafts. It consists of three parts: (1) a simple black pencil drawing on white paper, the subject being a bird; (2) the same outline cut, carved or engraved on the smooth side of a small piece of linoleum; and (3) the reproduction of this cutting or carving in printer's ink on a piece of wrapping paper, the pressure having been made by putting the linoleum "engraving" in an old-style letter-press.

(1) We thus have a drawing or design—the artist keeping constantly in view the fact that his lines are to be copied in carving or engraving, hence must be made simple, strong, expressive. This constant thinking of the material reproduction not only maintains intense practical interest in the young "artist," but it keeps his mind and hand down to the practical industrial problems—adaptation of means to end, cost of material, effectiveness of result.

(2) We have the carved or engraved reproduction of the bird, and the similar holding-down of the engraver to the industrial problems of material, and how to manipulate it so as to produce the effect of light and shade, of line and solid "body" of ink; of depth of cut necessary to produce proper effect.

(3) Finally we have the finished product, involving judgment as to quality, color and thickness of ink; its method of application; the laying on of the paper;

the pressure required for the printing process, and the peculiar "upside down" appearance of the engraving, which must be held and looked at as is printing type—a reversal of the method of ordinary reading.

A boy who could manage the three stages of this work would have become familiar with the view-point, as well as some of the technical problems, of the designer, the engraver or modeller, and the printer or lithographer. And all this at a cost of a few cents for materials used, and a few dollars for an old letter press.

THE STUDY OF COLOURS.

One point which has impressed the Commission is the great improvement that might be made in the teaching of these subjects and the interest that might be added by the introduction of new material from time to time. For example, the study of the primary colours could and should be undertaken when children are quite young, instead of leaving it to be taken up as a scientific study in the High School, when the children who most need it are not present. The scientific terms need not be used, nor the refinements of "tones" and "tints" dealt with. But nothing could be more fascinating to a child than the display of bright colours; and these, if properly handled, can be used in laying a foundation of taste in house furnishing, in architecture, in gardening, and in all the arts, the so-called "Fine" as well as Industrial arts.

As children learn the seven notes of the musical scale, they may learn the colours of the chromatic scale. A "chord" can be struck with the three primary colours—yellow, red and blue—and the relation of these shown to the present-day art of 3-colour printing by which natural objects can be presented in their true colours and tints, as seen in coloured picture-cards. At almost any printing office it would be possible for teachers to procure specimens of each of these three printings separately; then the result of two—red upon yellow—and finally that of the blue upon both, or the completed product. Passing on from this, the teacher by simple talks and illustrations could show the intermediate colours and their relation to the primary ones.

While dealing with this problem of colours, the children might be shown that though white and black are not "colours," yet they are of great importance in art industries such as printing, lithography, etc., and in drawings for architecture in which they are known as "light" and "shade"; also in drawing in the round, in which the essence of the beauty is the distinction between light and shade.

Dr. Montessori has added much to the value of her didactic material by the introduction of the bobbins of silk threads, of which there are 8 colours and 8 gradations or shades of each. The "game" of distinguishing these and rearranging them, or picking them out from memory after a single "observation", is most exciting and at the same time profitable to the children, who at seven years of age learn to do what would puzzle mature art students and textile workers. Such a collection of fascinating colours could be procured by any school for a few dollars.

Bases of Beautiful Designs.

Familiarity with designs which have won for themselves general recognition as being appropriate and beautiful, will enable the student to enjoy good taste, to think along such lines, and ultimately to produce designs with similar characteristics of suitability and beauty for the particular purpose for which they are designed.

Since natural objects, such as flowers, leaves, trees, some birds, and some insects are pleasing to the eyes of nearly all people, Schools of Design usually begin their pupils by letting them draw such objects. After they have acquired some considerable ability in that, the pupils are directed to put the outline of the object in conventional form. The repetition of such conventional forms properly arranged usually results in a well balanced and pleasing design, the fundamental balances and symmetry resting upon qualities which are inherent in the object of nature. Making fantastic contortions of lines does not lead to designs which are acceptable, and does not develop power which can be used as an asset for earning wages or for advancing the good taste of those whom the objects serve.

Drawing in Relation to Art.

A good deal of confusion exists in the minds of teachers, parents and pupils as to the difference, if any, between Drawing and Art. If Art is taken to be the beautiful expression through material forms of some concept of the mind, then Drawing is an essential for the production of pictures, paintings and sculpture. It is also essential to the profession of architecture. Drawing should not be followed by pupils in schools of Industrial Training and Technical Education for the purpose of qualifying the learner to produce works of Art in the form of pictures or paintings. The exceptional few who have talent in that direction should have opportunities for training in order that they may be able to apply such talent as they possess. No one recommends the teaching of Reading or Writing for the direct object or specific purpose of making orators or writers in the sense of those who produce literature. Reading and Writing are useful arts for the purpose of communicating, recording and acquiring information. The few specially endowed to see best, not merely the material aspect of things but the meaning of things in an ideal and spiritual sense, become the painters, sculptors, writers, poets and dramatists.

THE VALUE OF MODELLING.

The following paragraphs are quoted from "Handwork Instruction for Boys" by Dr. Alwin Pabst:—*

*Translated from the German by Bertha Reed Coffman, A.M., published by the Manual Arts Press, Peoria, Ill.

Experience teaches that artistic training cannot be given by means of lessons in the history of Art and by lecturing on works of Art, but above everything else it must be done by attempting to bring the pupil into personal relations with Art. This comes about most surely by his own activity in some field which stands close to Art and which leads finally to Art.

As a matter of course, the significance of Drawing is not depreciated by this fact; instruction in Drawing and practical work complement each other, and whenever the reformers of instruction in Drawing point toward a careful study of nature as the foundation for the entrance into Art, their efforts will be followed by instruction in Modelling, which completes and strengthens the instruction in Drawing.

Instead of solid, genuine work, we find false ostentation, imitation and trash. Not the excellence of work, but its cheapness is the desideratum, and with many people, even in the circles of the educated, the feeling for good workmanship is entirely lost. To acquire this feeling again and to win back Art for the people will be an important task for the future.

Under these circumstances the simplest object of utility becomes a work of Art, as the pictures and wood engravings of the old masters, of Durer, Rembrandt, and many others, show clearly. All of these masters had arisen from handwork. In fact, Art rests absolutely upon handwork. The best artists of the present time have seen this clearly and have turned back to the practice of the pure technique of handwork, so that Goëthe's thought now seems to be verified again: "Handwork, which is acquired only in a limited way, must precede all life, all activity, all Art. More culture is gained by learning how to do one thing well than by attaining mediocrity in a hundred pursuits."

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Recently, in connection with the efforts towards training in Art, which have already been mentioned, modelling has come more into the foreground. The significance of this in the teaching of Drawing is universally recognized by the reformers in this line of work. However different the kinds of work named may at first appear, yet the same thought lies at the foundation of all, and upon this their significance for education depends: instruction in handwork is to develop and strengthen the talents of perception and observation and make the hand capable of constructing out of given material something which will serve a definite purpose. Instruction in Drawing has the same end in view. But while here the representation executed by the crayon or paint brush must be limited to a flat surface, instruction in handwork has at its command much richer material for representation.

Artistic only when Humanistic.

The humanistic quality of Art teaching, when the best methods are followed, is made much of at the Glasgow School of Art and other schools visited by the Commission. The following passages are transferred from the information obtained in "Conversation" with Mr. Newbery, Director of the Glasgow School:—

"The School aims to make art applicable to industries. The object is to give people good taste and skill and power to apply good taste to the things they make, and to their own occupations. The School starts with the supposition that every boy and girl has an instinctive desire to express himself or herself in terms of Art. The point is to define exactly what is meant by Art. Mr. Newbery starts with the desire of the child to decorate itself, to surround itself with forms which are copies or impressions of what it sees, and he endeavors to make the child observe and study nature, and through this desire of decoration applied to itself or its surroundings to cultivate that side of beauty. It is a very simple proposition—to recognize a certain power which the child possesses, and to deal entirely with that.

"The old idea was that the school-master had so many homeopathic doses of Drawing to compound and count, throwing in stuff of no use to man or beast, and to serve that out to the children. The new idea is that Art students, like anybody else, have certain powers and instincts to be cultivated and directed.

Mr. Newbery said the result had warranted the new point of view, and he believed there were now in the West of Scotland a large number of people teaching Art by endeavoring to develop this instinct in the child and directing its attention to the observation of nature from a purely artistic point of view.

"A rather interesting experiment in educating the public taste is being carried on by Miss Macbeth, an instructress in charge of sewing and embroidery. Director Newbery said that when he was a boy in Dorset, the 'Dorset Smock' with its sewing, and the artistic decorations of the dwellings, were features of that country side. The people who made these smocks never heard of the Art School in their lives, yet they made extremely charming works of Art on traditional lines. So good was their work that when he could get hold of an old smock he bought it for the museum of the Art School as a work of Art relative to the craft.

"In sewing as taught in this School of Art, School Mistresses receive practical illustration of the belief of Art Teachers in the application of Art to the things of daily life. Hitherto they had been doing designs based upon floral forms, etc., now they had evolved a scheme whereby, in the very act of joining two pieces of cloth together, the stitches were so arranged that they formed a kind of decoration, the result being a work of Art.

"It is a step forward if people can be brought to see that Art ensues by simply doing a thing in an artistic way, for they then begin to feel that Art is not something exterior to themselves, or a technique apart from themselves.

"The child is a better artist at the end of the process just described than before, because the Art has developed outwards—which all Art must do."

Mr. C. Hanford Henderson puts the question thus:*

It seems to me that the weakness in the Art Schools lies in focussing their attention so exclusively upon the work. Their redemption will come when they turn to human life and make Art a means instead of an end. The current methods have the same defect that the motive has. They are largely prescribed, systematized, made mechanical and objective. They are not practical and causational, like the methods of the Kindergarten and Sloyd. And the method reaches its extreme chilliness when art students are taught how to teach Art. The defect in method will be remedied when the motive is humanized.

It would not be appropriate or useful in this Section which treats of "Methods of Instruction" to present a summary or review of the Reports on Art Education. Such a statement could only be disappointing as to the meaning and value of Drawing, Design and Art in general education and in Industrial and Art Education. Particulars may be found in the special Chapters or Sections devoted to those subjects.

However, the methods of instruction followed in the Preparatory Art Schools and the Branch Schools of Art at Leeds, shed so much light on the principles which have been discussed that this Section is ended by a statement of them from the official publication.

LEEDS—ART SCHOOLS.

Grade I.

PREPARATORY ART SCHOOLS.

The Course of Instruction in the Preparatory Art Schools is specially designed to give a sound educational groundwork in General Subjects and in Art Study, which shall be based on examples having vitality and interest, so as to stimulate and encourage beginners to further progressive and more advanced Courses of Study.

*"Education and the Larger Life," published by Houghton Mifflin Company: page 153.

Great importance is attached to the Courses of Instruction in the Preparatory and Branch Art Schools.

These courses are to be regarded as leading up to the more advanced instruction in Art and in the allied crafts given in the Central School of Art. To this end the Course of Study in the Preparatory Art Schools will be so arranged that it may help the student to acquire, at the beginning, that quickness of perception and accuracy of expression which are essential to all successful Art work.

To arrive at this, the student must first be taught to "see" *i.e.*, to understand and correctly estimate the shape and proportions of any form placed in front of him, before he attempts to make a representation of it. The delineation of any form offers no difficulty when once that form has been thoroughly grasped and understood.

A portion of each evening may well be spent in the students judging, by the eye, the relative proportions of lines quickly drawn on the blackboard by the teacher, or of objects placed before the class, the teacher demonstrating the accuracy of their answers by measurement. Constant practice of this kind, and the rigorous suppression of all attempts at measuring before the decision has been arrived at, will soon produce the power to quickly and correctly determine the shape and proportions of even the most complicated form.

The importance of a well-trained memory to an Art worker cannot be too highly emphasized, and students should accustom themselves to draw from memory not only their class studies but also objects (and things) met with in their daily surroundings. They will thus provide themselves with an unfailing storehouse of material which will be of constant use to them in later years.

No lesson should be allowed to close without some remarks by the teacher which will increase the artistic perception and good taste of the students. It must not be forgotten that art exists not to produce useless objects, but to beautify the necessities and surroundings of our everyday existence. This can easily be demonstrated by taking articles of common use, and showing by sketches on the blackboard how the articles might be improved in shape and ornamentation. As regards methods of drawing, students should be encouraged to avoid the use of india-rubber and to practise executing their studies both in line and mass (*i.e.*, by means of pencil or pen or by brush), the aim being to produce free, correct, and intelligent draughtsmanship. All drawings should be made from large diagrams or drawings on the blackboard, or from simple objects or leaf forms. On no account should small copies for individual students be used.

Occasional instruction might with advantage be given in Free Arm Drawing on a large scale with chalk on the blackboard or with charcoal and chalk on brown paper. The students might also assist the teacher in the preparation of the diagrams and illustrations required in the lesson. The application of simple scales as the basis of draughtsman's work is recommended, and simple geometric constructions might be worked and used as the basis for elementary ornamental arrangements of the freehand studies previously drawn. These arrangements may afterwards be tinted with flat washes of colour, the teacher using the exercises as the means of introducing the elementary principles of colour harmony and contrast.

Students will not be allowed to produce works for the adornment of their homes or the delectation of their friends. They will be expected to follow a course of serious study which will serve as the groundwork for their future advancement in Art and its applications to industry.

It is through the lack of this thorough grounding that many students have failed to realise the promise of their early abilities and have found that their want of knowledge of the fundamental principles of Art has seriously hampered them in their career.

Grade II.

Branch Schools of Art.

The subjects of instruction include:—

(*a*) Drawing of common objects in daily use, with concurrent exercises in Memory Drawing.
(*b*) Elementary plant form from Nature and its application to elementary design. Geometrical exercises with relation to design. Exercises in lettering with brush and pen.
(*c*) Light and shade from casts, etc.
(*d*) Elementary modelling in Clay.
(*e*) Elementary Woodcarving.

The Course of Instruction is designed to lead directly to the Higher Art Instruction given in the Central School of Art. Its aim, in the first place, is to make the student proficient in the handling of the various methods of artistic expression, *i.e.*, in the flat by line or mass with point brush or stump, and in the round by clay handling, in fact, to equip him with the means of easily and intelligently expressing his artistic intentions in a variety of ways. In the second place it is planned to increase the student's perception of the laws and principles of good Art by bringing before him their occurrence in nature and in ornament. It must not be forgotten that these lessons are to be regarded as means towards an end—the practical application of Art knowledge to industry—consequently the student should be encouraged to constantly compare his work with the productions of manufacturers and to note any special artistic or practical qualities in such productions. It should be pointed out that the principles of his own elementary studies are applied in the manufactured object in a more advanced degree, and that both are founded on the same natural laws.

No effort is spared to help the student to realize that his work in the Branch School of Art is in direct relationship with the work of the Central School of Art.

This is aided by the arrangement of occasional special exhibitions of advanced art or craft work in the Central School of Art, and by lectures and demonstrations by the principal and teachers of the Central School, at which the students in Branch Schools will be allowed to attend.

Loans of examples of advanced work done by pupils in the Central School are made to the Branch Schools, so that high ideals and a high standard of accomplishment may be constantly before the students. It is hoped by bringing out clearly the connection between the Branch Schools of Art and the Central Schools of Art that students may realize and appreciate the possibilities of advancement in Art Work offered to them, and that by thus securing definition of aim and continuity of purpose distinct benefit may accrue both to the individual and to the city.

SECTION 5: QUALIFICATIONS AND TRAINING OF INDUSTRIAL AND TECHNICAL TEACHERS.

In the organization of Technical Education perhaps the most important consideration and the one of the greatest difficulty is to find a supply of well-trained and competent teachers. The work of the Technical Teacher is to impart a knowledge of the subject which he teaches to his pupils, and for this purpose he must understand not only his subject but also the range and the limitation of the capacity of his pupils and something of their interests. He must also, for many parts of the work, be able to direct the pupil in the practical operations in such a way that he will profit by the experiences.

A point on which there is much discussion and much disagreement is whether Technical Instructors should be persons who have gone through a course of training in the principles and art of teaching and have supplemented that by having gone through a course of instruction in practical industrial work, or whether they should be practical workshop or scientific experts who have taken a short course of training in the art of teaching.

In the teaching of pupils under 14 years of age the trained teacher seems to be required and to have more success than one whose qualification is chiefly that of having skill and mastery in the practical operations, for in elementary work the mechanic is not likely to see the educational side; on the other hand, for pupils over 14 years of age a master of the mechanical or trade side appears to be very necessary. He readily secures the confidence and even the admiration of the pupils by any ability and skill which he is able to show in handling tools and materials.

From Dr. Seath's Report.

Before presenting a brief statement of the provisions for the training of teachers which exist in the several countries visited by the Commission, a statement of the question is given from the report by Dr. John Seath, Superintendent of Education for Ontario, on *Education for Industrial Purposes:*—

A. THE QUALIFICATIONS OF THE TEACHERS.

Special necessity for training.

In any scheme of education, the question of the qualifications and training of teachers is a basal one, and it is especially so in the case of industrial and technical education, which, being in

most respects a specialized form of education, requires teachers specially trained. Without teachers so trained, it would be useless to attempt to put into force programmes of study, be they ever so suitable. In all the European countries I visited, especially in Germany, provision is made for training such teachers, and inducements are offered them to avail themselves of it. Even in these countries, however, this is the part of the organization that often lags behind. Wherever industrial education has proved to be unsuccessful, its failure, I was invariably told, was due chiefly to defects in the teaching.

For Technical High Schools.

For technical high schools we must have technically trained graduates—men who have taken up science and mathematics as well as the shop work from the industrial point of view, and who are pedagogically fit for their work.

For Special Industrial Schools.

For special industrial schools competent workmen of the foremen grade are no doubt available; but, to be efficient instructors, these require special training; and for the complementary sciences, mathematics, and English, specially trained teachers will also be necessary. Most of our workmen do not possess the necessary theoretical knowledge of their trades; their general education is too often defective; and they have, of course, had no pedagogical training.

For General Industrial Schools.

For our general industrial schools in particular, we must have teachers who know and can teach the other subjects of the course, in addition to and in correlation with the drawing and the wood and metal work which have so far been the mainstay of the manual training departments. In this class of school, satisfactory results are best obtained when the related subjects are taught by the same teacher. At this stage he alone can correlate them properly. The department system is, however, often followed; and, when there are a number of teachers on the staff who act together under a strong and watchful principal the system appears to produce good results. But for a good many years the staffs of most of the schools will be small, and it will take time to secure generally an industrial outlook.

Manual Training Teachers not qualified.

For this reason it should be clearly understood that the manual training teacher is not now fully qualified for a position in an industrial school. We need, accordingly, to supplement his present education and to provide for that of the teachers of the technical and special industrial schools. For the former, the summer school would probably suffice; for the latter, ampler provision is indispensable.

IN ENGLAND.

In England the Commission did not learn of any special institutions or series of classes conducted for the purpose of training teachers for Industrial and Technical Education. The Technical Institutions themselves and the Departments of Applied Sciences of Colleges provide instruction for those who may be Principals or chief officers of instruction in the Technical Schools of higher grade. Some of the teachers had also had long and successful experience in practical work in shops or factories.

A sufficient supply of teachers required for Evening Classes is available from the ranks of those who have become successful craftsmen and who have had experience of instruction in Evening Classes themselves, as well as experience in the workshops or drafting offices. The general opinion was that it was highly advantageous,if not entirely necessary, that the teacher on the practical or shop side of the work for Evening Classes should be a successful workman and have a good knowledge of the materials, tools, machines and products of his trade.

At Barrow-in-Furness.

Mr. George Grace, Principal of the Technical School at Barrow-in-Furness, was good enough to have a conference with the Staff of the School on this subject

and to furnish the Commission with a brief statement of their opinion in regard to the matter. That was as follows:—

The problem of providing the best kind of teacher for Technical Schools is not one which can be solved by one method alone. The subjects usually taken in these schools vary so much in their nature and in the kind of qualification necessary for their successful exposition that it is advisable to consider the problem under at least two heads.

A. Certain subjects, of which Mathematics is the most important, require clear thinking and thorough methods of teaching rather than extensive technical knowledge, and generally the best teachers are those who have been trained to the teaching profession but whose tastes lead them to take an interest in the industrial applications of their subject.

The only assistance needed by these teachers is in the collection of the right type of examples needed for Technical purposes and occasional assistance by some one with fuller technical knowledge.

B. Other subjects, such as Machine Drawing, Technical Electricity, Building Construction, etc., which deal mainly with Technical knowledge, are best taught by men having considerable experience.

This is especially true of the advanced classes. Even here, however, it is necessary to recognize that successful instruction must be based on the scientific principles underlying the subject, and it is essential that the teacher should have a thorough grasp of these as well as of the empirical knowledge to be gained in the shop.

Very few of these men are likely to make successful teachers without some training in teaching method. Where possible, they should spend some time working under an experienced teacher who should hear the lessons given by them and have authority to criticize or suggest improvement in method.

To take men straight from shop work and let them commence teaching without some training is likely in most cases to end in disaster.

At the same time, it must be borne in mind that there are exceptional cases where men seem to have the ability to teach well without any such training.

Also, that more skilled teaching is necessary for elementary students than for those more advanced, and that a man with the requisite technical knowledge may make a good teacher for advanced classes who might be unsuitable for a class of beginners in the same subject.

IN SCOTLAND.

In Scotland the teachers for Continuation Classes are, in many cases, the teachers from the ordinary schools who have taken short courses or otherwise qualified themselves specially for carrying on work in Evening Classes. In Edinburgh, where the proportion of teachers is 122 Professional teachers to 299 Instructors who follow other occupations, the School Board has provided short courses of lectures and demonstrations of methods of teaching to help to qualify the practical instructors to present their subjects in the manner most suitable for the pupils.

IN GERMANY.

In Germany the teachers for the Continuation Classes are drawn from two sources: from the ranks of the Professional Teachers in the Elementary and Secondary Schools and from the ranks of those who are engaged in practical industrial occupations. Among the latter are many who have had the advantage of prolonged education during the time they were serving as apprentices and often for several years after their apprenticeships were completed. When persons who have taken such courses have aptness to teach and an inclination towards teaching they are among the best of Instructors.

The trend of practice in Germany is towards the teacher in the Continuation Classes and in other Industrial and Technical Institutions who devotes his whole

time to such work. At the same time it is held to be important that such a teacher should himself be a master of the particular trade, course or occupation from which the pupils in his particular class or classes come. The ability to do the work of the trade well is esteemed of no less importance than adequate knowledge and ability to explain the nature of principles and their application.

There is no short cut by which a sufficient body of competent teachers for Industrial Education for all the industries and for all the people in the various levels of service can be obtained. Perhaps the best course of preparation is one whereby the teacher or the prospective teacher, during the whole period of education from the Elementary Classes onward, has been taught the subjects and work which he will be required to teach, and has been taught by such methods and in such a way as he would be expected to teach. Many persons will rely upon the recollection of how they were taught to a greater extent than they will depend on their own ability to translate into practice the principles of teaching according to which they were told to teach.

Until that condition had been reached, and it has now been reached in Germany which is abundantly rich in such persons, it was necessary to make special provisions for the training of teachers for Industrial and Technical Schools. Scholarships were provided to secure enough persons to take the particular courses provided.

Special Courses Provided.

Among the best of these were the Courses provided at Carlsruhe in Baden. Students from the adjoining State of Wurttemberg were, under certain arrangements, permitted to participate in those classes. (See Report on Germany.)

The authorities in several cities are either conducting or planning to establish a Special Course for Vocational teachers which will give teachers in training one year after their ordinary Normal Course is completed. Chemnitz is one of the cities where that is in progress.

Director Goepfert, at Chemnitz, said he preferred the teacher who had had long practical experience, plus some pedagogic training, to the academic teacher with little or no practical experience.

At several of the schools visited all, or nearly all, the teachers had been teachers in the Elementary School with a year or more of practical experience in industry.

Frequently special departments were directed by men of the highest eminence in their professions who were left free to undertake commissions outside the duties of the school. For example, in one city the professor of Architecture was also advisor to the City Council and the designer of many new buildings which were being erected in the city. In the Art Departments in the Central Institutions in Glasgow and elsewhere the Instructors are encouraged to engage in professional work outside their classroom or school duties. That is done in order that they may be kept in touch with the practical side of progress.

Professional Teachers and Handicraftsmen.

The regular vocations or occupations of persons, who were employed as teachers in the Continuation Schools of Prussia in the year 1908, may be indicated as follows:—

In the Industrial Continuation Schools:	
Professional Teachers	12,068
Handicraftsmen and others	1,978
In the Commercial Continuation Schools:	
Professional Teachers	2,287
Handicraftsmen and others	191
In the schools of the Guilds and Unions:	
Professional Teachers	469
Handicraftsmen and others	920

The regular vocations or occupations of the persons who were employed in the Industrial Continuation Schools of Bavaria were:

Professional Teachers	2,271
Handicraftsmen and others	541

These may be compared with the proportions in the Continuation Classes in the City of Edinburgh, which are as follows:

Professional Certificated Teachers	122
Handicraftsmen and others	299

It will be observed that the ratio in Edinburgh comes somewhat close to the ratio in the Schools of the Guilds and Unions in Prussia.

Further Provisions in Prussia.

Since the visit of the Commission to Germany a circular has been issued by the Ministry, to the Presidents of all the Provinces included in the Kingdom of Prussia, setting forth that it was intended to institute a course of training for teachers in Industrial Continuation Schools, beginning in 1913. The course is to be held in Berlin, will last one year and will be terminated with an examination.

The subjects taught will include Pedagogy, with special reference to the organization and methods of instruction in Continuation Schools, knowledge of Business Methods, Citizenship, and the elements of Technical Drawing. Admission to the course will be limited to:—

(1) Engineers and artisans who have received a good general education and have done at least three years' practical work. Preference will be given to those who have already taught in a Continuation School. A knowledge of foreign languages will not be required, but credit will be given for a thorough mastery of the German language, Literature, and History, as well as some acquaintance with the economic and artistic questions of the day.

(2.) Teachers who have already passed the second professional examination and who have studied some industrial or technical subject, and have some experience in a Continuation School. This latter condition may be waived in

special cases. Preference will be given to candidates who have had practical experience in some branch of industry.

(3.) Other persons of a good general education who have already taught in a Continuation School and have done practical work.

Candidates for admission to the course must be not less than 24 nor more than 35 years of age. The fee for the course is 60 marks; this may be remitted in necessitous cases, or a scholarship may be granted where this has not already been done by the locality from which the candidate comes.

As the number of places for the course of training is limited, the passing of the entrance examination will not necessarily admit to the course, but candidates will be chosen according to the place taken by them and according to the date of application. Those who pass, but for whom there is not room, will be allowed to enter later without again taking the entrance examination.

IN THE UNITED STATES.

A course intended to fit Elementary Teachers for teaching the industrial work in the Trade Preparatory or Pre-vocational Schools has been begun in connection with the State Normal School at Fitchburg, Mass. Six months of Method Work is provided in all subjects taught below High School Grade, with opportunities for observation in all the grades.

Four afternoons a week are devoted to various forms of Industrial Work and to directing small groups of pupils from 11 to 13 at this work. In the first year the attention is devoted to mechanical drawing, the writing of specifications, estimating costs, science subjects, study of the common applications of power to industrial work; psychology, child study, pedagogy, and the history of education are taken in connection with those. During the second year course the teacher in training is given an opportunity to gain some experience and to test his ability in teaching, management, etc., by taking full charge of a classroom for 14 weeks—six hours a day, five days a week.

Provision was being made at the time of the visit of the Commission to Teachers' College, Columbia University, New York, for special classes for the training of teachers. The work in both of these places is so new, however, that no information can be obtained as yet as to the success of the efforts made.

Opinions of Leaders in Industrial Education.

The opinion of Mr. David Snedden, Commissioner of Education for Massachusetts:

> We have reached a stage in the development of vocational education for boys when the greatest single handicap is the absence of administrators qualified to organize such education and of teachers trained to carry it on.
>
> Not long ago we imagined that any teacher could get results in a vocational school. Now we know by sad experience that only men who have themselves had successful shop experience can be efficient teachers of vocations to boys.
>
> Men having only the equipment given by Technical Schools cannot as a rule successfully teach machine shop practice, electrical working, plumbing or printing. All these lack something which only experience in productive work can give. But the mechanic, merely as a mechanic,

is not necessarily a teacher. Teaching ability is sometimes a gift, but more commonly it is in some part a product of experience and training in the art of teaching. Our Vocational Schools, it is now clear, must be taught by persons whose first qualification is to be found in their mastery of a craft and who have somewhere added to this some mastery of the art of directing learners and of imparting knowledge.

The opinion of Mr. Charles R. Allen, Agent for Industrial Education under the Massachusetts State Board of Education:

The most efficient scheme of getting industrial teachers is to take persons who have already secured their trade experience by entering the industry and working in it for some time without any thought of ever becoming teachers. I believe the person most likely to make a successful industrial school teacher is a person who entered industry fairly young and whose ambition and thoughts have been turned for a number of years to securing the mastery of that trade, to securing promotion in that industry and to developing the efficiency and the intelligence which lead toward promotion. A young man, for example, of pleasing personality, who entered an industry at 15 or 16, has worked his way up to a foremanship, and kept his intelligence alive by Correspondence Courses, Evening School Courses and reading, is to my mind the best possible material out of which an effective teacher can be made. If after this period of 8 or 9 years of training he decides that he wishes to enter teaching, a course which will deal most efficiently with him is, I believe, the course most likely to furnish us with efficient teachers.

The opinion of Miss Mary Schenk Woolman, President of the Women's Educational and Industrial Union, Boston:

Adequate teaching in Trade and Vocational Schools for girls requires, in truth, a new kind of teacher with a new kind of preparation. Courses at present in the ordinary normal schools are entirely inadequate to meet the need. The trained Public School teacher cannot successfully teach skilled trades by having solely a short additional training in trade processes, for she knows nothing of workroom and business requirements and is academically predisposed. Neither does trade experience of itself make a good industrial teacher, the difficulties being (1) a narrow view point of the purpose of the training and the method of conducting it, (2) a one-sided and even prejudiced interest in the social, economic, labor, and industrial questions of the day, and (3) an over emphasis on the product rather than on the pupil.

The beginning of a few Trade and Vocational Schools on new lines is making some points clear as to the desirable preparation of the teachers: (1) The training of teachers for Industrial Schools for girls must combine the preparation of broadminded, industrially intelligent women with the experience of the real trade worker; (2) The following subjects should be given—while the list seems formidable the arranging of the work is entirely possible and has been tried already—household arts work, with a background of art and science; health and hygiene; trade academic education; trade-art education; business efficiency and forms for shop organization; practical social, labor, industrial, and economic knowledge; and psychology and pedagogy for a basis of teaching founded on philosophic thought. Accompanying these subjects must be investigations of industries employing women and also of living conditions of working girls under varied circumstances, trade experience in Normal School business shops followed by real work in trade itself, and practice and assistant teaching in Industrial Schools of various kinds.

FOR RURAL SCHOOLS.

This question has been discussed at some length in the chapter on Education for Rural Communities. (See page 285.)

Considerable experience has already been had in Canada as to the value of short courses for the preparation of teachers for the more elementary parts of education which lie on the borderland of Industrial Education. Short courses have been provided in Manual Training, in Nature Study, in School Gardening and in Household Science. Typical of the best of the courses now provided is that at the Macdonald Institute at the Ontario Agricultural College, at Guelph.

At first under the Macdonald Rural Schools Fund, scholarships were given to a certain number of teachers from each of the five provinces east of the great Lakes which enabled them to take a course of five months at the Macdonald Institute. That work was successful, but it was intended only as an expedient to meet the situation at a few places until pupils coming through Rural Schools and afterwards through High Schools or Academies, when they came to teach, would teach as they were taught.

Later on special instruction was provided in those branches at practically all the Normal Schools in the various Provinces.

However, when all that can be done, in the way of preparation of Professional Teachers for Elementary Rural Schools, has been accomplished there still remains the fact that there are aspects and features of agriculture and housekeeping which the ordinary teacher is not competent to present to the classes from the lack of practical experience. That raises the question whether all the education which has been demanded of the school can be arranged for by the teacher alone.

It belongs to the parents and others to discharge their share of the responsibilities for the education and training of the children in the homes and at work; but as changed conditions are throwing more and more the obligation of education in early life upon the school and the teacher, it appears to be necessary, at least for a time, that the services of the Professional Teacher should be supplemented by assistance from Non-Professional Instructors on the vocational side of the work of the school.

The testimony given to the Commission, in many of the Provinces, indicated a willingness on the part of some of the leading farmers, to devote one or more half days a month, to take children over a farm and give them information in a form which they would understand and which would increase their interest in and ability for rural occupations.

SOME CONCLUSIONS.

There is no short cut by which a sufficient body of teachers for Industrial Education for all the industries and for all the people in the various levels of service can be obtained. Perhaps the best course of preparation is one whereby the teacher or the prospective teacher during the whole period of education from the Elementary Classes onward has been taught the subjects and the work which he will be required to teach and has been taught by such methods and in such a way as he would be expected to teach. Many persons will rely upon the recollection of how they were taught to a greater extent than they will depend on their own ability to translate into practice the principles of teaching according to which they were told to teach.

The Commission is of opinion that the training of persons, who are not professional teachers, for work in Industrial and Technical Schools might be begun and advanced by the following means:—

1. The establishment of classes for Foremen, and other intelligent and highly skilled workmen, should be undertaken for the first object of giving such men

greater qualification for their own occupations. Such classes would primarily be for the benefit of those who attended them. Out of the number of persons who might be expected to attend, doubtless a number would be revealed who would have some natural aptitude for teaching, and who during the following year would be disposed to teach in the Continuation Classes and to teach to some extent after the method by which they themselves had been instructed. To begin these classes it would be necessary to secure the services of a few men who had had successful experience in such work.

2. At the same time inducements should be offered to professional teachers, who already had a knowledge of and a taste for Industrial and Technical work, to spend some time in practical work in workshops or factories similar to those of the place in which they would afterwards teach.

3. By a combination of the two methods in a short time it would be possible to secure a local supply of men competent to conduct Continuation Classes and the Trade Classes in Day Technical Institutes. Men with more systematic and thorough training would be required for the higher places in Technical Institutes and Middle Technical Schools.

SECTION 6: BUILDINGS, EQUIPMENT, MUSEUMS AND LOAN COLLECTIONS.

The Buildings.

The essentials of a school building are that it should be well lighted, well ventilated, commodious enough for the teachers and pupils and their work, and comfortable in respect of temperature. The requisites of the equipment for instruction are that it shall be serviceable and adequate for the training of the pupils, for illustrating the principles of what they ought to understand, and for encouraging them and stimutating them to do their best. It would be quite impracticable and it would not be likely to be useful to report in detail the character of the buildings or the extent of the equipment found in the Industrial and Technical Schools which were visited. Every school requires a building and equipment to suit the particular needs of the community and the pupils. A good teacher and earnest pupils can make progress without very much equipment although the provision of suitable equipment is most advantageous

The effect upon pupils of all ages of the appearance of the building, its arrangements, its intrinsic qualities of dignity and beauty and of the placing and use of the equipment are not to be overlooked or neglected. The appropriate housing of a great public interest like education has its effect on public opinion as well as upon the minds of the pupils who attend. One may ask the question whether the maintenance of religious exercises would have been so general and effective throughout the ages if the churches had not been in some cases housed in beautiful and enduring cathedrals.

Examples of Equipment.

A few examples only of what was seen are cited as representative of scores of others which might be mentioned. Nearly all the more recently equipped Municipal Institutes and Technical Schools in England had a liberal provision of equipment to illustrate Mechanics. Miniature and in some cases full-sized apparatus were provided to illustrate the principles of motion and force exerted in such ways as are common in industries. These were not only provided plentifully but were evidently used a great deal.

In one of the Schools of Switzerland an enlarged model of the parts of a sewing machine was used. It could be taken apart and put together again by the pupils, who thereby obtained a clear idea of the mechanism and motions whereby the driving power was applied to the needle and the thread.

In all the textile schools single looms were provided. These could be taken apart and put together again by the pupils. Power weaving looms were used in the same way at the Textile Institute at Lowell, Mass. The pupils by such work gain power in not only the weaving of cloth but in the ability to understand the mechanical operations whereby the warp and woof become fabric to be afterwards finished into cloth.

The taking apart and putting together again of looms and other machines is usually a part of the regular Course of Study at Textile Schools. The making of drawings of the main parts of the machines and showing the relation of one part to another is frequently included in the Course

At the Mining School at Cowden Beath, Scotland, the equipment included a complete model of the ventilating system of a Coal Mine showing the intake of the fresh air, the circulation through the various levels of the mine and the return.

At the Technikum, at Chemnitz, a steam engine for instruction was specially fitted with valves in such a way as to enable the students to test and record the loss in power and efficiency which would result from leaky valves, leaky packing or other defects such as might arise from prolonged wear or neglect in factory use.

At the Technical High School, at Charlottenburg, specimens of bridges of different designs, completely constructed to scale were provided in the museum. In this institution the models and specimens were in sufficient abundance to fill completely all the rooms of such a Technical School as would provide accommodation for all the work of 200 or more pupils in Canada.

Simplicity and Suitability.

It is to be borne in mind that care should be taken that the equipment is entirely subordinate to and serviceable to the further growth, development and progress of the pupils. Excessive equipment or an equipment that is arranged to turn out desired results without the exercise of observation, examination, comparison, action or judgment by the pupil has a tendency to make the pupil himself mechanical. The domination of the mechanical and the material

must be prevented and guarded against at all points if the object of the training and education is to be attained, viz., the development of the capacity and the power of the individual.

Liberal equipment is useful to the younger and less advanced pupils chiefly to illustrate facts and principle . Its chief use for older and more advanced pupils is to give them the wherewithal to work effectively. There is no clear line of demarcation between these two, but the consideration of them will enable those responsible for the equipment of schools and classes to make adequate provision without waste. An example: A witness before the Commission at Truro, Nova Scotia, with long experience as a locomotive engineer, told of teaching firemen and other learners the uses and relations of the various parts of a locomotive engine by a simple model in tin of the main parts which could be easily taken apart.

Museums and Loan Collections.

In the Continuation Schools of Germany and also in the Middle Technical Schools for special Industries and the Technical High Schools, very liberal provision is made in the museums for instructional and illustrative materials.

Frequently arrangements are made in connection with some Central Museum, to provide loan collections of its specimens, which are obtainable by other places for limited periods of time. By the organisation of such circulation, practically the whole of the working part of the contents of a museum can be seen at the various branches or smaller places to which these loan collections are sent. The plan is in extensive operation in connection with Art Schools in England. An example may be taken from the Museum of the Embroidery School at Plauen.

AT PLAUEN.

Examples of excellent specimens of products, similar to those from the occupations or trades with which the classes or schools are concerned, are purchased from time to time including ancient and modern, local, more distant and foreign. Students are encouraged to study these, with the view to analyzing and understanding their elements of beauty and the qualities that have made them serviceable and attractive.

Students, workmen and superintendents and owners of factories are permitted to borrow specimens to make such examination of them as they may see fit, to make drawings and to use them either for new designs or to reproduce them in modern materials.

The Director of the Museum is encouraged to refresh his collection every year, by the best specimens he can obtain, and relatively to other expenditures, liberal provision is made for this purpose.

AT NUREMBERG.

At Nuremberg courses of popular lectures are given in connection with the Museum. These provide information regarding new inventions likely to prove

useful for trade purposes. Working men and women attend these in large numbers. Chemical research is pursued in connection with the museum. Students desirous of conducting experiments for research purposes receive gratuitous instruction from the professors. A collection of specifications of patents, carefully tabulated and open to all enquirers, is a special feature of the Museum. The Museum also has a Statistical Department containing a history of all the industries of the State of Bavaria arranged in classes and giving full accounts of all the processes of manufacture. Other details such as the owner may be willing to furnish are represented, such as the number of machines used, trade marks and patents owned, power employed, number of workpeople and annual output.

The Trade Museum at Nuremberg and its work may be taken as illustrative of similar museums in other States.

Some Recommendations.

The Commission is of opinion,—

1. That there should be adequate equipment of teaching material and illustrative material in connection with all Industrial Training and Technical Education;

2. That in addition to the teaching equipment in the way of materials, instruments, tools, machines, etc., there should be a full collection of products, of designs, of machines, of tools, such as are used or may be used in the businesses that are carried on in the very best way;

3. That collections of such material should be loaned for periods from time to time to smaller places organized in connection with a larger centre for this purpose.

SECTION 7: SCHOLARSHIPS AND FEES.

The Commission is of opinion that where young workers, who are learning a trade, attend a Continuation School for one or two half days per week, it is in the interest and to the profit of the employer that such students should be paid wages for the hours of such attendance, at the same rate as they would receive for working in the shop or factory. The opinions expressed to the Commission by those who employ such apprentices were all to the effect, that the work done by the apprentices during the part of the week spent in the shop was of such a character and that their usefulness was so much increased, that the value of the apprentices to the concern for the whole week was greater when they spent one or two half days of time in a suitable Continuation School, than when they gave their whole time for the week to the work of the shop.

Scholarships.

Scholarships are provided for various purposes. Sometimes they are offered chiefly as incentives to pupils to do their best. They are given as rewards

for attentiveness, diligence and general good conduct and progress. These are frequently won as the result of good verbal memories. The Scholarships themselves usually provide for a sum of money. In case the pupil goes on to a higher institution and attends its classes they sometimes provide for tuition or tuition at reduced rates and sometimes a maintenance allowance. Sometimes they provide for a sum to enable the pupil to travel and observe and investigate conditions in other localities or in other countries.

In Scotland the Scholarships in connection with the Continuation Classes and Technical Education are given to equalize the opportunities to boys and girls and young men and women to take advantage of the instruction and classes provided by public authorities. When a young person has successfully exhausted the opportunities provided in the locality he may obtain a Scholarship sufficient to meet the necessary travelling expenses with some allowance for living expenses. Such a person would be thus put on a level so far as opportunity is concerned with the young people living in the vicinity if the institution or classes where the more advanced work was being carried on. In that way, without making it necessary for the people to subject themselves to any humiliation by proving poverty, all the young people who have ability and perseverance can obtain practically equal opportunities for pursuing their education to the highest extent.

The Scholarships available and paid annually in Scotland now amount to about £149,800, or about $728,000. The bulk of the sum is awarded as Scholarships in connection with general Secondary and University Education but pupils for Technical Courses are receiving increasing amounts. (For further particulars see Reports on Scotland, Ireland, London, Denmark).

It is not suggested that Scholarships for identical purposes should be given in Canada, but it would seem to be desirable that Scholarships should be provided to equalize opportunities as far as possible, as betweeen those who are within reach of a suitable Industrial or Technical School and those who through circumstances or location are not within reach of it.

The Principal of a school in Berlin said, regarding the grant of Scholarships to pupils who attended that institution: "that he did not know a case where either family, political, or church influence had been used to gain a scholarship for a pupil. The sole grounds of consideration were the needs of the pupil, the merits of the pupil and the aptitude and qualification which he had for profiting from further education such as the Scholarship provided."

Charging Fees.

The educational value is the one that receives most attention from educators. In so far as it increases the interest of the pupils it is of benefit to them in the Course. In some cases the fees are returned in full when the student has completed a certain percentage of the possible attendances. The stimulation to accomplish the number of attendances is not necessarily in proportion to the value of the amount to be returned. It is sometimes sought like the merit card for good

conduct by a scholar, or like the ribbon or decoration of an Order by an older individual in the State, who has not lost his susceptibility to rewards that incite the immature.

The general opinion expressed to the Commission has been that charging fees to those who attend Continuation Classes from 14 to 18 years of age should be followed chiefly for the sake of the effect on the pupils themselves. In many places and cases, notably the Continuation Classes of Scotland, the fees charged to all students seventeen years of age and under are returned when the individuals have made at least 75% of the possible attendances at the classes for which they are enrolled.

In some communities and in connection with some schools the amount of fees collected form an appreciable source of revenue for maintenance. The tendency in the case of Continuation Schools and of all schools for what might be called the handicrafts, and the lower ranks of officials such as foremen in connection with industry, is to either charge no fees or charge such a small amount that it does not bar anyone from attending.

SECTION 8: CORRESPONDENCE STUDY COURSES AND TRAVELLING INSTRUCTORS;

Education by this means has some points of resemblance to the extra-mural work of Colleges and Universities whereby students are enabled to take a full course leading to a Degree without attending lectures or doing any laboratory work at the institution itself. The course of reading and study having been outlined, the student having done the work submits to examination and, if he passes successfully, obtains his standing.

Methods of Correspondence Schools.

The Correspondence Schools took a similar course with students who could not attend Industrial or Technical Classes. The plan in the main was as follows:— When a course was to be offered on a particular subject or branch of work special writers prepared text-books. These text-books were not constructed in such a way as to present the subject in the order of its logical sequence of treatment as a whole. The matter was arranged in the order in which it would come to or be required by the worker in learning his occupation. Then when the student under the Correspondence Course came to any difficulty he was invited to write about it. An expert individual or staff examined his communication and sent him an appropriate answer. The answer was intended not merely to impart the information, but to indicate how the student could go about obtaining the information for himself on that question and similar questions that might arise.

A great many Courses have been provided in the effort to let the sequence of presentation of subject-matter be in somewhat close connection with the

progress which a young person makes in carrying on the particular occupation with which it deals. The principle which underlies this plan is in harmony with the principle which guided Dr. Kerschensteiner of Munich in providing Classes in the Continuation Schools for each important trade.

Correspondence from Students the Weak Point.

The testimony given to the Commisssion, by many men who had taken such Correspondence Courses, was to the effect that they got real good from them; that the Courses were arranged in such a way that they could follow them; and that when they took the trouble to write about a difficulty they always obtained prompt and complete answers. In many cases the students confessed they did not take the trouble to write about a difficulty; and the want of its removal prevented and discouraged them from completing the Course.

Most of the witnesses, who stated that they had taken a Course in a Correspondence School, said they had not completed the Course, but had derived benefit from it sufficient to cause them to say it was well worth while and that they had obtained value for the amount they paid.

When the subject-matter for any Course has been defined and arranged, some progress is within the capacity and power of almost any intelligent worker. However, more advantage and benefit would be derived by most workers if the Correspondence Course could be supplemented by visits or lessons from a Travelling Instructor. Such visits should be timed to occur with not more than one month of interval between them. Such a review as an Instructor could give, and such a survey of what was to come as he could present, would not merely increase the interest of the student but would enable him to do the work much better. Examples of this kind of work are now to be found in Wisconsin, in connection with the Correspondence-Study Courses and Extension Work carried on by the University.

Canvassing for Students.

One reason for the marvellous expansion of the business of providing Correspondence Courses was the sagacious form of effort to secure students. The usual means of advertising and obtaining publicity were followed. Offices were opened in important centres, managers were appointed who acted as canvassers and personally commended the Courses to the residents and workers in their area. They took a leaf out of the book of the Life Insurance agents, and went after the business. Hundreds of young men, unaware of the Correspondence Schools, and indifferent to any help which might be obtained by such means, were induced by the persistence of the agent to take a Course and give the scheme a trial. Probably the agents received liberal commissions on the amount paid for each Course for which they secured a pupil.

The charges or fees varied according to the nature of the Course taken, usually from $40 to $80 for each Course. The payment included the books required, i.e., the books which contained the lessons or the Course, but not all the books which were valuable for supplementary reading.

From Dr. Seath's Report.

The report by Dr. Seath on *Education for Industrial Purposes* contains information regarding Correspondence-Study Courses, particularly by the University of Wisconsin, in terms so nearly similar to the notes and official publications obtained by the Commission that the following passages, including those relating to the University of Wisconsin, are taken from Dr. Seath's report.

The Correspondence-Study Industrial and Technical School.

The Scranton Correspondence School, which is controlled by the International Printing Company of that city, with a capital of $6,000,000, is probably the largest school of the kind in existence. Its advertising literature shows that in October, 1906, its Canadian agencies contributed $180,000 to the yearly receipts. Most of this must have been collected from the workmen of the Dominion; most of it, also, must have been collected from the workmen of Ontario; and, as the industries of the Dominion are rapidly increasing, the total sum collected must now be much larger than that given above. A half a million of dollars is, I believe, now a moderate estimate, although some put it at a far higher figure. The school is maintained solely for the gain of its stockholders, and, like any other business house, it sends out "salesmen," who canvass the various districts into which the management has divided the United States and Canada, and even far New Zealand, Australia, and South Africa. When a high school inspector I met these salesmen more than once in hotel offices, where they were relating to eagerly listening workmen the advantages of the correspondence school. This company offers for workmen trade courses in drawing, lettering, sign painting, plumbing, heating and ventilation, sheet-metal work, boilermaking and shop and foundry practice; and technical courses in architectural drawing, civil engineering electrical engineering, mechanical engineering, mining, steam and marine engineering, structural engineering, telegraph and telephone engineering, and textiles.

One of the chief reliances of the school is its list of text-books specially prepared for industrial work. The claim that the list is a good one is well supported. We also must have suitable text-books for all grades of our industrial schools.

The International Typographical School of Printing, at Chicago, is under the direction of the International Typographical Union's Commission on Supplementary Trade Education, and is supported by fees from students and appropriations from the International Typographical Union. The existence of this school under its conditions shows the value the workman attaches to the instruction given. Its object is to counteract the evils of specialization as practised in printing offices. This school is an institution with an educational, not a commercial, aim, and, I may add, is strongly favoured by the American Federation of Labour. In its report of 1909 this federation gives a list of seven other labour organizations that have undertaken a similar extension of education for their members, and takes occasion to commend enthusiastically such "supplemental technical education," and to report that it should be provided at the public expense.

The desirability of schools of this character was first suggested to me by some of the representatives of organized labour in the city of Toronto, and I have found on enquiry a very general desire on the part of labour men that a correspondence school should be provided in Ontario. It certainly appears to be reasonable that, in providing the workman with instruction, his convenience and necessities should be taken into account. Even when we have secured a system of day and evening industrial and technical schools, many will not be able to avail themselves even of the evening classes. There will also be small manufacturing centres—too many I fear— where it will be impossible to maintain evening classes effectively organized or evening classes at all.

CORRESPONDENCE-STUDY SCHOOLS AND THE UNIVERSITY OF WISCONSIN, MADISON.

The University of Wisconsin is a State-supported institution, its main revenue being derived from a two-seventh (2-7) mill tax. In addition to this, however, in recent years appropriations have been made for building and other purposes. The annual appropriation made by the State Legislature, including the tax and special appropriations, amounts to $1,200,000. Each college of the University has its special staff.

University Extension Division.

The University Extension Division is one of the co-ordinate colleges. It consists of four departments:

1. *Lecture Instruction Department.* University lectures are available for lecture courses or single lectures, commencement addresses, etc., in a large number of departments.

2. *Debating and Public Discussion Department.* This department issues bulletins, stating questions of live interest, gives affirmative and negative references upon them and lends libraries for preparing debates. Thousands throughout the State in High Schools, School Boards, Town Councils; and farmers' social and women's clubs, etc., have been assisted through this department.

3. *General Information and Welfare Department.* This department serves as the clearing-house for enquiries and for informal dissemination of useful and serviceable knowledge having a direct bearing upon general welfare.

4. *The Correspondence-study Department* is the one in which we are interested. The instruction in it is given in five main divisions as follows:—

(1) Special Vocational Studies;
(2) Elementary School Branches;
(3) High School and Preparatory subjects;
(4) Special Advance Work;
(5) Regular University grade of work.

In the foregoing, thirty-five departments of the University are represented. These embrace 206 courses of study, the subjects taken by the correspondence students including nearly all that are offered.

As illustrations of the scope of the work done, I give the details of three of the grouped vocational studies:—

Mechanical Engineering: Mechanical Drafting, Stationary Engineering, Machine Design, Refrigeration, Heating and Ventilation, Power Plants, Gas Power Plants, Steam Engine and Boiler Operation.

Structural Engineering: Structural Designing, Structural Drafting, Bridge Construction, Building Construction, Masonry and Reinforced Concrete.

Electrical Engineering Lighting and Wiring, Car Operation Electric Railways Telephony, Central Station Operation, Dynamo Running, Power Transmission.

A large percentage of students taking mechanical courses pay fees through orders on their employers, in small monthly instalments, many at the rate of $2.00 a month and some at less.

Correspondence-Study Department.

The students in the Correspondence Courses come from the ranks of labourers, apprentices, farmers, skilled mechanics, clerks, salesmen, travelling men,

stenographers, druggists, bankers, business men, home workers, club women, students, teachers, lawyers, clergymen, doctors, civic officials.

Some of the members of the University Extension Division are appointed for Correspondence-Study work alone and devote their entire time to it. Others divide their time between correspondence and residence instruction. Others again give most of their time to residence and the rest to correspondence instructtion. The professors and instructors for any course in correspondence read the recitation papers and give the instruction in these courses. Those who carry on the work in industrial education subjects have by their previous training and experience, special qualifications, not only for teaching these subjects, but even for the production of suitable texts.

Local Classes.

In addition to the instruction given through correspondence, professors and instructors from the University make visits to communities in which a group of students are working along the same line and there supplement the correspondence instruction with class-room lectures and individual instruction. In communities where local centres have been developed, the University has provided a staff consisting of a local representative or manager, usually of professorial rank, and instructors in such branches as have a sufficient number of students to warrant special local instructors, and field organizers to present the character of the University extension work to those who may profit by this form of instruction. These local classes meet in the local University head-quarters, in rooms belonging to school boards or public libraries, or in specially appointed class-rooms in a commercial or industrial establishment set apart and equipped by that establishment for University Extension teaching purposes. In one instance the owner of large business interests has supplied well furnished class-rooms and has equipped them with books for the students' use. He has also offered to pay the fees of all employees who complete courses of study .

The President's Remedy for Defects.

It is significant of the success of the scheme that of the total number who began work only about 4 per cent. dropped out before completing the course, and those who did so had good and satisfactory reasons. One of the well known defects of the commercial correspondence schools, such as that of Scranton, has been that so many students drop out. This defect President Van Hise realized shortly after the establishment of his University Correspondence School. I quote his words:

> The extension movement at the Universlty has developed beyond our most sanguine expectations; indeed has expanded day by day, and I see before it almost limitless opportunity. Correspondence work at the outset followed the model of the commercial correspondence school, but Director L. E. Reber soon saw that there were two defects in that system—the defect that each student was obliged to work by himself, and the defect that he did not come in contact with his teacher. These two handicaps are so great that only a small percentage of those who begin a course of instruction continue to the end. It requires a great deal of stamina for a man, after he has worked nine or ten hours in a shop, to sit down by himself in the evening, study a lesson and

write a paper; and thus a very large percentage of students in correspondence-study courses have in the past fallen out before the end is reached. To remedy these defects it was suggested that the artisans should be gathered into classes, and meet a teacher. Hence, we have instituted the travelling professor.

But in order to make this more successful, it was necessary to get the co-operation of the merchants and manufacturers. Therefore we came into Milwaukee and presented the case to the merchants and manufacturers of this city. Some of them said, we will give you an opportunity to meet the men in our shops; a number of them offered quarters for class-rooms; and some of them went so far as to say, we will pay the men for the time they are receiving class-room instruction. In Milwaukee at the present time we have more than 1,000 students doing vocational work in twenty different manufactories. Thus, the defects of correspondence work have been remedied, and instead of some ninety-five per cent. dropping out of a course before its completion, less than five per cent do so. Already we are told by the merchants and manufacturers of Milwaukee that the effect of this movement is seen in the increased efficiency of their workmen; that it furnishes them better-trained foremen, and in greater numbers.

Attitude of the University.

Although this department of the University has been in existence only since January, 1907, the registration had grown from 26 on that date to over 3,500. Of the latter number, nearly 2,000 are registered for special vocational studies.

President Van Hise's statement of the attitude of his University on the question of the extension movement for industrial education is well worth quoting; it is that of a State University which recognizes to the full its obligations to the people who support it:—

It is the desire of the University to fill the gap in the training of artisans—to do the work of the trade school until the trade school occupies the field; and when they do so fully, to take the artisans from these schools and make of them broader and better citizens; to give them an opportunity commensurate with their ability such as every citizen should enjoy in a democratic community, in a civilization where we do not recognize that one man is superior to another, and where we hold that the door of opportunity shall be open to all.

Nor is the University of Wisconsin the only University which has adopted an extension scheme. Within the past few years a number of other State Universities, of Chicago, Kansas, Nebraska, and Minnesota; and half-a-dozen others have introduced correspondence-study instruction on a similar basis, although, of course, they have not yet carried it so far.

TRAVELLING INSTRUCTORS.

Travelling Instructors were among the earliest of School-masters; and Canada has some satisfactory experience of their value. The large and important Dairy business was very greatly advanced by the employment of Travelling Instructors who visited the Cheese Factories and Creameries. That work was begun about 1884 by the employment of Professor Arnold, of New York State, by the Dairymen's Association of Western Ontario. It has been gradually extended and improved and has been regarded as so successful and beneficial that there are now over 30 such Instructors employed in the Province of Ontario alone, and about an equal number in the Province of Quebec.

Information in detail is given of the nature of the work of such Travelling Instructors for Rural Communities in the Report on Ireland and in the Chapter on Education for Rural Communities.

Travelling Instructors for Industrial Classes are employed by the University of Wisconsin in connection with its Correspondence-Study Courses and Extension Work.

Travelling Instructors for specialized industries are employed in England, as for example in the boot and shoe making industry around Northampton.

Travelling Instructors are successfully employed in connection with the courses of the International Correspondence School, as for example in giving instruction in the use of air-brakes on locomotive engines and cars. Specially fitted cars are sent to Divisional points from time to time to be used in connection with the lessons.

SOME RECOMMENDATIONS.

The Commission recommends:—

1. That Correspondence-Study Courses be provided in connection with Provincial or Inter-Provincial Institutions for Industrial Training and Technical Education to serve workers in Industrial, Agricultural and Houskeeping occupations who are out of reach of classes.

2. That Travelling Instructors be arranged for to conduct Industrial Classes at intervals in small places where the population or attendance is not sufficient to engage the whole time of a teacher.

3. The employment of Supervising Instructors to visit small places where Industrial Classes are conducted and to assist any teacher of little experience to make the best of the time of the pupils.

4. That when Correspondence-Study Courses are provided by a Central Institution, Travelling Instructors should be provided to meet, from time to time, those who follow the Correspondence-Study Courses to explain such difficulties as might not be easily removed by correspondence only and to encourage them to complete a Course.

SECTION 9: CONCLUSIONS AND RECOMMENDATIONS.

General Principles.

The Commission is of the opinion that Industrial Training and Technical Education in order to be of greatest benefit to individuals, to industrial development, to localities, to the several Provinces and to the Dominion as a whole, should be organized and maintained in accordance with the following principles:—

1. It should be under Provincial control and regulation.

2. It should receive financial support from individuals, from local authorities, from Provincial Governments and from the Dominion.

3. Provision should be made for active participation in its control, management and direction by individuals in the locality who would represent Industries as employers and employees, Agriculture, Women's Occupations particularly Housekeeping, Business and Organized Education.

4. It should provide educational opportunities for those who have gone to work and also for those who are able to return and to devote their time for

some months or years, as the case may be, to a course or courses of instruction and training.

5. It should make provision to ensure, as far as practicable, equality of opportunity for all preparing for industrial, agricultural and housekeeping occupations and for workers in such occupations.

6. It should be carried on in cordial co-operation with existing systems of education, and in such a way as to have the advantage of the use of existing buildings, equipment and teaching staff so far as these may be suitable and available.

Efficiency by Free Co-operation.

Any effort at control, by means of a proportion of members of the administrative body, based upon the relative contributions of money from Provincial and local sources, could not apply advantageously to work of this kind. The end to be sought is the most efficient and economical and suitable education which can be provided; and also the maintenance of local interest and the utilization of as much as possible of the local talent and the further equipment of that talent by the experience which the individuals would gain only by participating in the administration.

An instance: A statement made in this connection by Sir John Struthers, Secretary of the Scottish Education Department, is illustrative of much that came to the attention of the Commission in the countries visited. In substance he said that the Scotch Education Department would rather have a thousand men and women in Scotland thinking and planning and striving to make the courses of study and the education meet the needs of their own communities than have ten thousand implicitly doing what the Department directed.

Experience elsewhere indicates that it will be advantageous to leave the initiative, the control and administration of the general work of the school largely in the hands of the Local Authority. The Central or higher Authority should co-operate by putting at the service of the Local Body the full information which it alone could possess, and the benefit of inspection, counsel and advice by experts whom it only could employ. Supervision and inspection should all be directed to conserving and increasing local interest, and at the same time to maintaining high standards of work in the school, and raising these gradually as the pupils and teachers from experience are able to come up to them

To Fit in with General Education.

In order that there might be the least amount of waste in pupils passing from the Elementary or General Schools into the schools or classes for Industrial Training and Technical Education, and the greatest economy in the use of buildings, plant and competent teachers already in the service of the place, it would appear disirable that the Local Authority administering Iudustrial and Technical Education should be identical with the Local Authority controlling general education or in close organic association with it. If separate from the other it would

seem expedient that it should be appointed either wholly by the Local Educational Authority or that at least a majority of its members should be so appointed, and that they should be; persons representing industries as employers and employees, business men, in the rural districts farmers, women who are housekeepers, and educators who have practical knowledge of school administration.

The Lay Elements to be Represented.

Experience in all countries indicates that it is highly desirable that the Committee which has control of the Courses should contain representatives of the employers and of the employees actively engaged in or connected with the several occupations for which the students are being prepared or in which they are engaged. The co-operation of these persons who are engaged in industry with the educators or teachers ensures that the Courses of Study provided, and the kind of work to be carried on in the school, will be such as to meet the needs of the industries, the personal requirements of the young people and also conform to the judgment of the workmen who have had experience as to what is most useful to them. Such co-operation also helps to make the work of the school not merely acceptable to the pupils and satisfactory to the parents but also to keep it in accord with the desires and judgment of the men already engaged in the several occupations.

KINDS OF SCHOOLS AND COURSES.

It appears to the Commission desirable that provision should be made to enable all individuals in a community to continue their education for at least some portion of each week, month or year, until the age of 18 years. When it is not practicable for such persons to attend classes, it is desirable that they should be led to follow Correspondence-Study Courses, reading courses and private study, in order that the growth of intellectual interests and the appreciation of social duties might keep pace with the maturing of the body and the progress in mastering some occupation.

The provision of opportunities for the development of individuals and for the training of workers for all the occupations can be accomplished only by gradual development. Only in that way can they become an economical part of the public service which contributes to the industrial, economic, intellectual and social progress of the nation.

Equality of Opportunity.

Sometimes an idea prevails that a scheme of education provides equality of opportunity by letting all who desire have access to the same classes. Equality of opportunity, to mean anything real, must have regard to the varying needs, tastes, abilities and after lives of the pupils. To be able to attend schools, whose Courses are provided chiefly for those whose education can be continued until

18 or 20 years of age, does not ensure any sort of equality of preparation for occupation or for living to those who are compelled to leave at 14. Equality of opportunity to enter a school designed to prepare leaders, is not what is needed and is not what is wanted by the parents of most of the children. Equality of opportunity, to be sincere and operative, must offer opportunities of education which will serve the pupils not all the same thing, but will serve them all alike in preparing them for the occupations which they are to follow and the lives which they are to lead.

The problem is to unite in well-ordered Courses of Study what has been proven thoroughly useful in formal education with what has been found really educational in industrial and technical work. The Commission indicates how that may be done in the Chapter VII on Some Provisions in a System of Industrial Training and Technical Education.

Statement of Aims.

The aims of Industrial Training and Technical Education are arranged here in an order of importance for the guidance of those who plan the courses and kinds of work to be done:—

1. The preservation of health and the vigour of life.
2. The formation of good habits.
3. The development of the sense of responsibility and duty.
4. *The preparation of the body, mind and spirit for following some useful occupation.*
5. *The cultivation of the mental powers, the acquisition of knowledge and the development of the scientific spirit, with direct reference to the occupation.*
6. The promotion of goodwill and desire and ability to co-operate with others.
7. The maintenance of standards and ideals.
8. As all-inclusive and ultimate, the perfecting of the human spirit, the improvement of the quality of life itself and the betterment of the conditions of labour, leisure and living.

Means Towards Attainment.

The full results of Industrial Training and Technical Education are to be sought through,—

1. The discipline which comes from interest in work and from co-operation with others in educational classes to at least 17 years of age;
2. The conservation of the love of work and of satisfaction in doing it well;
3. The acquisition of technical scientific knowledge, and the development of the scientific spirit;
4. The preservation and strengthening of a spirit of willingness to accept and fill one's place in organized society which implies relative positions and relative degrees of authority.

The acquisition of mere trade or craft skill is only one of the means which in education can be made helpful for reaching the larger ends. General education also promotes these ends; and there need be no essential difference between the aims of Industrial Training and Technical Education and those of general education. The main distinction is in the narrower field and more direct methods by which Industrial Training and Technical Education seek to provide qualification for the working or earning part of life's activity.

The Ground to be Covered.

In the opinion of the Commission, it is important:—

1. That the needs of the individuals for knowledge, ability and skill in their vocations or occupations should be considered in all the courses of study and methods of education which are provided at public expense;

2. That from 12 years of age and onward the general and cultural education may with advantage include adequate vocational education;

3. That, while the ultimate or ideal end should be kept in mind, the immediate effort should be directed to meet successfully the most pressing needs of existing conditions;

4. That the effort should be directed to provide,—

(*a*) An adequate supply of competent instructors, as well-informed and trained as practicable, to carry on the work which may be attempted;

(*b*) Courses of study and work in the several classes or institutions which would help the individual workers in connection with their occupations and thereby utilize the interest aroused to keep them in touch with educational effort and influence for development of the more purely mental qualities and moral powers;

(*c*) Such a system as can be most advantageously connected with the existing systems of education and existing institutions, classes and efforts.

The Commission does not recommend that the effort should be directed mainly to make Industrial Training and Technical Education fit in with the existing systems of education, existing institutions or classes; but rather to secure, as far as practicable, the co-operation of all the educational interests, in order to ensure progress in the most effective way in the shortest time and with the greatest benefit to the pupils.

The Commission would regard it as a misfortune if the aims, systems, institutions, classes or methods of different parts of education should be made to clash with each other. So long as the dominant purpose is to direct them all towards the real benefit of the pupil, of the community and of industry, they converge towards, or radiate from, a common centre and do not lose effectiveness and power by mutual oppositions.

The problem is not to subordinate one part of education to another, but to provide for all parts and kinds. The special aim of Industrial Training and Technical Education should not be permitted to obscure or dominate the whole aim of education, which for the individual is the perfecting of the spirit and the development of all the powers of body and mind.

Must be Attractive and Adequate.

One of the first considerations is that the Classes and Courses must be attractive to the young people themselves.

Many different kinds of school work are needed to meet all the requirements of all the young workers. This statement requires to be repeated and again repeated.

The general principles now accepted as essential to the success of Industrial and Technical Continuation Schools are:—

1. That the subject matter of every Course shall be directly related to the real problems of the daily life and occupation of the pupils.

2. That the pupils shall be arranged into classes so that those in one class will have common aims and purposes.

3. That the teachers shall have had practical experience in the occupations dealt with and be skilful in teaching, enthusiastic and sympathetic.

4. That the continuity of Courses shall be maintained for one year at least and where practicable for several years in sequence.

5. That the schools shall be equipped with illustrative and teaching material adequate to meet the practical needs of the pupils and to appeal to their imagination and, so far as possible, to their artistic tastes.

6. That the rooms where the classes are held shall be attractive, comfortable and convenient, that the atmosphere of the place, in an intellectual sense, shall be encouraging and stimulating and that opportunities shall be provided for the right kinds of social intercourse.

To Meet Individual, Industrial and National Needs.

The Commission recommends:—

1. That wherever practicable Continuation Classes should be constituted on the basis of identity or similarity of interests on the part of the pupils, rather than on the basis of ages, or academic or literary attainments. The best basis to indicate a similarity of interests is that of the occupation followed. In order that none might be excluded, from their inability to join in such work as constitutes the Course, it is desirable that there should be Preparatory Classes.

2. That the Continuation Classes should provide Courses for the learners in the industrial, agricultural, commercial and housekeeping occupations of the community.

3. That the Courses should be progressive from year to year, and that pupils should be encouraged to attend them for a period of not less than three years.

4. That Continuation Classes should be provided also for workmen and foremen, workwomen and forewomen, to enable them to extend their knowledge and increase their ability and skill for management and planning..

5. That Schools or Courses should be provided of the grade of Intermediate and Secondary Industrial and Technical Education for those who are able to continue at school for from two to four years after the age for Elementary Education.

6. That Middle Technical Schools or Courses (Industrial, Agricultural and Housekeeping) should be provided for those who are able to return to school for periods of from 3 months to 3 years after having been at work until at least 17 years of age.

7. That Courses of a suitable sort should be provided for highly skilled foremen and managers. These might take the form of Short Courses, lasting from ten days up to one month, according to the needs of the particular industry and locality.

8. That existing institutions of College rank should receive whatever additional financial support may be necessary to enable them to fill their place in a national system of Industrial Training and Technical Education.

SOURCES OF FINANCIAL SUPPORT.

In the establishment and maintenance of Industrial Training and Technical Education in the several countries visited, the proportion of financial support provided by the several authorities was so various that no general statement of a principle can be deduced from the information obtained.

In the case of countries such as England and Scotland, in which substantially the same public authorities share in the control and expense of Industrial Training and Technical Education as carry on the work of general education, the proportion contributed by the Central Authority is sometimes more and sometimes less than in the case of its grants towards the support of general education.

In Germany the Imperial or Federal Government does not contribute towards the maintenance of education or exercise any control in regard to it with the exception of indicating the standard which qualifies those who pass the examination to give only one year instead of two of military service, which qualification can be attained by boys at about their 16th year.

The proportion of the cost provided by the several authorities varies in the different States of the Empire and also in the several cities and sometimes in the one city in the case of each institution or kind of school. In the higher or more expensive forms of Industrial or Technical Instruction the State, being the larger and financially the stronger authority, pays the largest proportion. The reason for that lies in the fact that those who receive the higher forms of Technical Instruction are best qualified to serve the State and advance its interests as a whole rather than those of any particular community.

In the United States public education is provided and maintained by the organized action of communities, county or district areas and the several States. The Federal Government exercises no control over and contributes nothing to the support of general education. In several Acts the Federal Government has

provided substantial financial assistance for the establishment and maintenance of State Colleges of Agriculture and Mechanic Arts.

The United States and Switzerland are the two countries visited by the Commission in which the Federal Government does contribute substantially towards the establishment and maintenance of Industrial Training and Technical Education. In Switzerland the maintenance of general public education is wholly a question for the Communes and Cantons, although the Federal Authority has begun in recent years to give grants for the maintenance of general education in needy localities. The Federal Government or Bund gives substantial grants for the maintenace of Technical Education and maintains the renowned Polytechnic at Zurich.

Considerations to be Kept in Mind.

The Commission is of opinion that the following considerations, and others of a minor character, indicate that individuals, Corporations, Associations, Municipalities, the Provinces and the Dominion should co-operate in providing financial support for a system of Industrial Training and Technical Education for Canada. The Commission has endeavored to outline a plan whereby that may be done, with advantage to all interests concerned and injury to none, in Chapter VII : A Development Policy for Canada. The considerations referred to above are as follows:—

1. Since Industrial Training and Technical Education have everywhere proved advantageous, and advantageous only, to the community and the nation, it follows as expedient and proper that the State and the community should assist in providing the means of such education. Moreover, since such education is of immediate benefit to the individual it may be claimed that the individual or his parents should meet part of the expense. However, the interests of the community and the Province predominate so much that, in order to prevent any disability which the charging of relatively high fees might impose, Public Elementary and Secondary Education is substantially free to the individual. There are exceptions, but the trend is in the direction of the school, without fees, maintained by the public funds. Although some of the Universities and Colleges charge high fees, in their case a considerable share of the total cost of education is provided either by grants from the Provincial Governments, revenues from endowments or contributions from philanthropic sources.

2. The incidence of the charge, for the cost of schools, should have regard to the ability to pay as well as to the advantage that will result from the education. This principle should be applied in seeking a basis which would be equitable, from which to obtain revenues to maintain Industrial Training and Technical Education. It may be assumed that the fees should not be considered as a main or important source of revenue, but should be rather for the sake of the effect on the attitude, earnestness and regularity of attendance of the pupils.

3. The cities derive the most immediate benefit from the maintenance of Industrial Training and Technical Education and are financially better able

to support it than the small communities in towns and villages and in rural districts. For both reasons a larger proportion of the total cost of Industrial Training and Technical Education might and should be borne by cities than by the smaller towns and rural communities.

4. The industrial efficiency of the individual worker is of value not merely to himself, to the particular trade at which he works, to the community in which he lives, but also to the nation as a whole. Moreover, the facilities for travel and the frequent change of residence indicate that, while the individual would obtain the benefit of Industrial Training and Technical Education in one locality, he might follow his occupation in another that might be far distant. That would be the more common and likely because of the large and rapid growth and development of Canada.

5. The very considerable increase in the population of Canada by immigration is throwing additional burdens for Elementary Education upon the communities and the provinces. The enhanced public revenues, due to growth by immigration, goes in a large measure into the Dominion Exchequer. The increase of the volume of trade brings in larger amounts through the Customs Offices. This would indicate that the new financial responsibility and burdens for Industrial Training and Technical Education, on a scale large enough and generous enough to be available to all the people between the ages of 14 and 18, should be sustained in large measure by funds from the Dominion Government.

6. The work carried on by the Dominion Experimental Farms, while mostly devoted to research work by experiment, is similar to some of the Technical Instruction provided in other countries as a part of the Educational system. The many and valuable bulletins issued, the frequent and useful addresses by members of the Staff at meetings of farmers and others, and the visits of thousands of farmers to the Experimental Farms, are all definitely intended as a means to educate the farmers into a wider knowledge of the systems and methods of farming and the principles which underlie them.

7. The work of the Dairy and Cold Storage Commissioner, the Live Stock Commissioner and the Seed Commissioner are also in very deed educational, although not nominally so.

8. Those institutions and offices, and the activities of the officers themselves, are intended to have educational results affecting the knowledge and ability of the farming community, affecting the methods whereby their work is being carried on, and in general developing the power of the workers through intelligence and increased skill in the management of their business. That they have so affected them is written large on the progress of agriculture, and the education of farmers, during the past quarter of a century.

9. A Dominion Act for the granting of aid for the advancement of Agricultural Instruction in the Provinces was assented to at the session of Parliament 1912-13. Section 3 of that Act (*The Agricultural Instruction Act*) is as follows:

> 3. For the purpose of aiding and advancing the farming industry by instruction in agriculture, and for the purposes authorized by this Act, the following sums, aggregating ten million dollars, shall be appropriated and paid out of the Consolidated Revenue Fund of Canada during each fiscal

year for the period of ten years beginning with the year ending the thirty-first day of March, one thousand nine hundred and fourteen, namely:—

During the fiscal year ending the thirty-first day of March, one thousand nine hundred and fourteen, the sum of seven hundred thousand dollars;

During the fiscal year ending the thirty-first day of March, one thousand nine hundred and fifteen, the sum of eight hundred thousand dollars;

During the fiscal year ending the thirty-first day of March, one thousand nine hundred and sixteen, the sum of nine hundred thousand dollars;

During the fiscal year ending the thirty-first day of March, one thousand nine hundred and seventeen, the sum of one million dollars;

During the fiscal year ending the thirty-first day of March, one thousand nine hundred and eighteen, the sum of one million one hundred thousand dollars; and the like sum of one million one hundred thousand dollars during each of the succeeding fiscal years until the expiration of the fiscal year ending the thirty-first day of March, one thousand nine hundred and twenty three; provided that any portion of any of the above sums which may remain unearned or unpaid at the expiration of any of the said fiscal years previous to the last shall be carried forward and remain available according to its apportionment for the purposes of this Act during any one or more of the succeeding years.

Grants in aid of Public Service.

Some of the general principles which by experience have been found politically and economically successful, in the providing of Grants in Aid of various kinds of public service, by a Central Authority are concisely and clearly set forth by Mr. Sidney Webb.* The following statements, based upon his book, are presented as illustrating the trend of administrative practice in the United Kingdom and as being a summary of competent opinion in so far as it appears to be related to this question in Canada:—

VARIABLE CHARACTERISTICS.

By a "Grant-in-Aid" the English administrator understands a subvention payable from the Exchequer of the United Kingdon to a Local Governing Authority, in order to assist that Authority in execution of some or all of its statutory duties. The subvention may be an isolated payment, but is usually recurrent or annual. It may be a matter of statutory obligation or dependent on the recurring decision of the Minister in charge of a particular department. It may be unconditonally of fixed amount, or variable according to the circumstances of the time. Most important of all, its variable amount may be dependent on the growth of population, or of a particular section of it, on the amount of some particular service, on the number of officers appointed, or the sum of their salaries, on the expenditure of the receiving Authority, on the rateable value of its district, on the efficiency of its work, or on some other condition. And according to the conditions and stipulations that are attached to the Grant-in-Aid, so will be, whether or not we like it or foresee it, its effect on public administration.

Their use has often been sought as a means for making an inroad on the Exchequer and to save the local rates, for a service which the locality would otherwise be required to maintain wholly for itself.

AS AN INSTRUMENT OF GOOD GOVERNMENT.

The importance of a system of Grants-in-Aid as an instrument of good government is coming to be recognized more and more. Legislators and the public connect a system of Grants-in-Aid with legislation to make it effective. In that regard much depends on the particular conditions upon which the Grant-in-Aid is made and can be obtained.

Grants-in-Aid, by Sidney Webb: Longmans, Green & Co., London, 1911.

In the actual practice of administration Grants-in-Aid are becoming more and more pivots on which the machinery of government really works.

Central executive departments have at their command a wider experience and a greater knowledge than any local body could possess. The combination most highly to be desired is that of liberty for the locality with efficiency through co-operation with the Central Authority. The combination of local interest, knowledge and ability with central interest, knowledge and ability give the best results.

Grants-in-Aid are means of equalizing the burden of taxation. Extreme inequality of burden exists between that of one district and another. This is aggravated by inequality of means to bear the cost, and also by the larger cost per head of population, owing to local, social and economic conditions. When the burden of taxation is felt by the people of the locality to be inequitable, that itself hinders the proper development of the public service.

The amount of Grant-in-Aid from the Central Authority should bear some equitable proportion to the actual amount or cost of the public service in each locality considered in the light of the ascertained ability of the locality to pay.

A most important use of Grants-in-Aid is through them to give weight to the suggestions, criticism and authoritative instructions, by which the Central Authority seeks to secure greater efficiency and economy of administration. The verdict of experience is that when properly devised and applied they afford a basis for the best of all relations between Central and Local Authorities.

ENCOURAGING DESIRABLE LOCAL EXPENDITURES.

The Grants-in-Aid are used to stimulate and promote expenditures in the ways thought desirable, rather than in other ways. Given for education they are conditioned on schools maintained in efficiency.

Some of the grounds on which the policy of Grants-in-Aid can be justified or advocated:—

1. They may be given as a recognition of the fact that the local service thus aided is one which is performed, not for the locality alone, but, in part at least, in furtherance of the interests of the community as a whole.

2. They may be made, not for services arbitrarily styled "National" (because they are services which every community needs and derives benefit from), but for certain definitely selected services in the efficiency of and results from which the community as a whole has considerable interest.

All the successful grants have taken the form of proportional subventions towards the cause of specific services. A lump sum grant for general purposes becomes an encouragement to extravagance and laxity of administration. Whatever sum is paid should vary from year to year according to the extent and efficiency of the service by a Local Authority. There are advantages from variable grants, and also advantages from the grant being one on which the Local Authority can depend.

Local Authorities are eager for increased subventions. The thing to do is to put the payment of the subvention on conditions which will not merely relieve the ratepayers, but also promote the efficiency of the service and secure service of value to the community as a whole, which would not otherwise be provided.

As a rule grants should be variable in the interests of efficiency, and should afford special encouragement to poor districts. Therefore grants may be given in lump sums in proportion to the total expenditures on the service by the Local Authority, and in proportion to its poverty or ability. That seems to be the best basis which experience dictates.

PROMOTINO EFFICIENCY IN ADMINISTRATION.

There is need for an efficiency audit. The community as a whole which provides the money for a Grant-in-Aid has the right to satisfy itself, by the inspection through expert officers of the central departments concerned, that the service is performed up to the extent, and with at least the degree of efficiency that the community may in its own interests from time to time prescribe. No grants should be payable unless a certificate is given by the department of the government concerned, that the Local Authority is administering the service alike in adequacy and efficiency in accordance with law and authoritative regulations, up to at least the national minimum, and doing its best according to its means. The advantages of local over national or central administration are very great. It is important that local government should be preserved, extended and improved. The object should be to secure co-operation between the Local Authority and the Central Authority, and not to cause conflict through any policy or plan by which the Local is expected or required to be active only in obedience to the instructions or requirements of the Central.

An efficiency audit should extend to more than the question of the bare legality of the expenditure and of the fact that it was made in a certain direction on certain indicated objects.

Restatement of Some Principles.

The Commission is of opinion,—

1. That financial support should be provided by Public Authorities, and by individuals, Corporations and Associations who are directly concerned and who would be likely to profit by the results to be obtained.

2. That the relative measure of support should be in some equitable proportion to the interest in the results, and the ability to pay, of the four possible classes of contributors, viz,—(*a*) the individuals, Corporations and Associations, (*b*) the local community such as the Town, City or County, (*c*) the Province and (*d*) the Dominion.

3. That in determining the proportion of the cost of Industrial Training and Technical Education, to be contributed by different public authorities, regard should be had not only to the benefit to the local community to be expected from Industrial Training and Technical Education, but also to the ability of the community, and to some extent to its willingness, to provide the education of an adequate kind and to a sufficient extent.

4. That it is reasonable and desirable that the Public Authority with the larger financial resources should meet the largest proportion of the cost for the communities where population is most sparse and the amount of taxable property, per head of pupils to be educated, is lowest.

5. That the prevention of progress in a locality and the lack of development in individuals, which might result from delay in providing suitable education until the local community was both able and willing to provide it in full or in a large measure, would be felt not only by that community itself, but by the Province and Dominion as a whole. In consequence, on economic as well as other grounds, the larger Public Authority, Provincial or Dominion, which is able to give a large measure of financial assistance, to a community weak in resources, would find such a course to be an excellent investment. The development of Industrial Training and Technical Education in such a community would bring it forward into ability to take a larger share for itself in maintaining the cost of such education and other public services.

6. That the Authorities, by whom financial support is furnished, should have sufficient cognizance of the results from it to be able to pass intelligent and fair judgment on the question of continuing or lessening or increasing the amount of support to be given.

7. That the financial support should be arranged for under such legislation as would warrant individuals and communities in deciding to devote a considerable period of time and amount of money to the evolution of Industrial Training and Technical Education. In order that plans might be made with reasonable confidence in the permanence of the undertaking, it is highly important that such provision should be made as would give reasonable assurance to the teachers and instructors, who become qualified to carry on the work, that satisfactory remuneration would be paid to them and continued employment provided for them.

8. That the financial support provided from Provincial or Dominion sources, as grants to Local Authorities, should be devoted mainly if not wholly to the provision of competent teachers and the payment of a proportion of teachers' salaries and of the cost of equipment for instruction.

ORDER OF PROCEDURE IN LOCALITIES.

The Commission is of opinion,—

1. That in smaller towns the provision at first should be in the nature of Courses in Industrial Science, Drawing and Calculation, with opportunities for constructive work in wood, metals, textiles, foods, or other materials appropriate to the larger industries of the neighborhood. Out of such Courses would grow Classes or Courses specifically appropriate for the workers in the various industries.

2. That in the larger places it would be expedient to provide Courses appropriate for the groups of fundamental industrial occupations such as the building trades; metal and machine trades; wood working trades; electric trades; textile trades; clothing trades; boot and shoe trades; printing and lithographing trades; leather, glove and harness trades; paper making; and art trades.

3. That when Classes or Courses for these grouped trades have been carried on, Classes or Courses for the particular trades could be evolved. For example, for the building trades, there would be Classes or Courses for masons, bricklayers, carpenters, painters, etc. In like manner there would be developed for the metal and machine trades, particular Classes or Courses for machinists, moulders, blacksmiths, etc. In a similiar manner, out of the woodworking trades, would come Classes or Courses for cabinet makers, furniture makers, pattern makers, wooden utensil and tool makers, etc. Out of the general school for the textile trades, special Classes for spinners, weavers, lace makers and the makers of embroidery would be arranged.

4. That in every case a Local Development Board, or other Local Authority, should make, or cause to be made, a plotted-survey of the needs of the population by numbers, ages and occupations, and another plotted-survey of the provision (if any) which exists in buildings, equipment and teaching force suitable and available for use. When the one plotted-survey is placed over the other the situation can be studied with the greatest advantage to all interests. In this connection consideration should be given to what was done at Leeds and Edinburgh.

5. That the training of teachers and executive workers for service in Industrial and Technical Schools should be advanced as soon as practicable.

6. That Classes for Foremen, and workmen who are both intelligent and highly skilled, should be undertaken for the first object of giving such men greater qualification for their own occupations. Such classes would primarily be for the benefit of those who attended them. Out of those who attended doubtless a number would be revealed who would have some natural aptitude for teaching, and who during the following year would be disposed to teach in the Continuation Classes and to teach to some extent after the method by which they

themselves had been instructed. To begin these classes it would be necessary to secure the services of a few highly efficient teachers who had had successful experience in such work.

7. That inducements should be offered to professional teachers, who already had a knowledge of and a taste for Industrial and Technical work, to spend some time in practical work in workshops or factories similiar to those of the place in which they would afterwards teach.

8. That by a combination of these two methods, in a short time, it would be possible to secure a local supply of men competent to conduct Continuation Classes and the Trade Classes in Day Technical Institutes. Men with more systematic and thorough training would be required for the higher places in Technical Institutes and Middle Technical Schools.

SESSIONAL PAPER No. 191d

CHAPTER VII: A DOMINION DEVELOPMENT POLICY.

SECTION I: PROVISIONS FOR INDUSTRIAL TRAINING AND TECHNICAL EDUCATION.

The Commission considers that the Provisions which are indicated hereafter under the names of Classes, Courses, Schools, Institutes and Colleges are necessary in a system or systems of Industrial Training and Technical Education for Canada.

The plan of statement by Classes (or Schools) is adopted because it is believed that by this means Local Authorities and Provincial Authorities will be helped in the best way to co-ordinate the Provisions which now exist with what is to be provided, in so far as that is desirable, and *vice versa*.

The Provisions have been arranged under three main headings:—

For those who are to continue at school in Urban Communities;

For those who have gone to work in Urban Communities;

For Rural Communities.

Under each heading the Provisions have been put in Divisions beginning with the elementary and going upward. For example, under the heading for those who are to continue at school, Division I comprises Intermediate Industrial Classes (or Schools), and Division VI contains Technical Colleges and other institutions of similar rank.

Instead of attempting to present in this Chapter a statement in great detail of the character of the Courses of Study of the Classes of any Division, references are given at the end of each Division to pages where full information may be found. A fuller discussion of matters dealt with here will be found in Chapter VI on Organization and Administration; Chapter IX on Education for Rural Communities; and Chapter X on Education for Housekeeping Occupations.

The lower Divisions under each heading are the immediate concern of all communities, although no locality can be wholly without interest in the higher institutions since some of the teachers for the lower Divisions will be educated in them and also some of the men and the women for the foremost positions in industrial, rural and housekeeping life.

Practically every Urban Community requires the Provisions in the first three Divisions, whereas, with the exception of the two largest Provinces, there is not room or need at present for more than one Technical College of the highest grade in any Province.

Making the Most of Existing Provisions.

Some of the Provisions recommended herein already exist in more or less developed and organized form in some places. In the matter of the highest

institutions, such as Technical Colleges, Colleges of Agriculture and Colleges of Domestic or Household Science, Canada appears to have a sufficient number. They could all be used to their utmost capacity and to great advantage in connection with the education of teachers and other leaders in all departments of Industrial Training and Technical Education.

It is not to be inferred that the Classes (or Schools) of any Division require buildings, equipment or staff for themselves, wholly separate from what is required for the Classes (or Schools) in the other Divisions. Whether an institution should have accommodation and facilities for more than one kind of Classes (or Schools) is a matter to be decided according to local conditions. There are undoubted advantages from having Classes of the different Divisions (and of different kinds in the same Division) in one institution, and there are advantages from having the more elementary Classes in a building or buildings convenient to the homes of the pupils. Local needs, conditions and resources furnish the only adequate data for guidance in that respect.

The Commission counsels energetic action in all the Provinces in arranging for the Classes; and advises prudent consideration before deciding upon new and permanent buildings. A year or two of experience in provisional quarters would enable the Local Authority to avoid serious mistakes. Expert counsel and criticism which should be available from headquarters, would assist it to provide for its needs economically, adequately and effectively. For example, in the City of Belfast six years of creditable work were accomplished before the Municipal Technical Institute was completed. By that time its arrangements and equipment provided just the right kind of facilities. They have become a tribute to the wisdom and ability of those in charge and a model for other towns and cities.

The first thing for a Local Development Board to do is to make a Census-Survey of the community, the industries, the occupations and the existing accommodation and facilities. The examples of Leeds and Edinburgh are noteworthy in this connection.

The next step is to consult an expert or experts, from Provincial or Dominion headquarters, as to how a beginning can be made to meet present conditions and to provide for future development economically, prudently and effectively.

The third step is to make plans and send forward a proposal and budget to the proper Provincial Authority.

The remainder of the path will reveal itself by experience, discussion, counsel and co-operation.

The Provisions recommended are as follows:

FOR THOSE WHO ARE TO CONTINUE AT SCHOOL IN URBAN COMMUNITIES.

Division I. Intermediate Industrial Classes (or Schools).
" II. Co-ordinated Technical Classes (or Schools).
" III. Technical High Schools.
" IV. Apprentices' Schools.
" V. Industrial and Technical Institutes.
" VI. Technical, Home Economics and Fine Arts Colleges.

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FOR THOSE WHO HAVE GONE TO WORK IN URBAN COMMUNITIES.

Division I. Continuation Classes (or Schools).
" II. Co-ordinated Technical Classes (or Schools).
" III. Middle Technical Classes (or Schools).
" IV. Apprentices' Classes (or Schools) in Workshops.
" V. Industrial and Technical Institutes.
" VI. Extension Lectures and Correspondence-Study Courses.

FOR RURAL COMMUNITIES.

Division I. Intermediate Rural Classes (or Schools).
" II. Rural High Schools.
" III. Continuation Agricultural Classes (or Schools) under Resident or Travelling District Instructors.
" IV. Continuation Housekeeping Classes (or Schools) under Resident or Travelling District Instructresses.
" V. County or District Agricultural and Housekeeping Schools.
" VI. Young People's Social Service Schools.
" VII. Schools for Agricultural Apprentices.
" VIII. Agricultural and Home Economics Colleges.
" IX. Correspondence-Study Courses.

FOR THOSE WHO ARE TO CONTINUE AT SCHOOL IN URBAN COMMUNITIES.

Division I.—Intermediate Industrial Classes (or Schools).

Qualifications for admission:—

Age, 13 years and over;

Completion of the work of the Elementary School, or ability to read, write, draw and calculate to the satisfaction of the Principal or a Committee on Admission.

Completion of two years of Pre-Vocational classes in an elementary school would be most advantageous.

Wherever necessary Preparatory Classes should be conducted to enable pupils who are not qualified for the Industrial Classes to receive the required instruction.

There should be separate schools for boys and girls, or separate departments in the same school.

Courses:—Two years or less.

The kind of work and study should provide series of experiences arranged in proper sequence to give the training and knowledge which would be advantageous to young people who are to follow industrial occupations. As far as practicable the manipulations of materials, (such as wood, clay and stone products, metals, paper, textiles and foods), the work with tools and machines and the articles made, should have regard to the industries of the area and the population served by the school.

The theoretical, science and language work should be kept in close association with the life interests of the pupils and should be taken up to the extent of their capacity, considering age and degree of previous attainment, and in keeping with the primary object of the school, which is to ensure progress by the pupils towards efficiency in "doing things" and becoming good citizens.

It is entirely desirable that the theoretical and book work should be related directly to the doing-projects of the pupils and *vice versa*. Taking up subject-studies in Mathematics, Drawing and Science which are out of immediate relation to the practical work of the pupils has not been found a profitable way of using the time.

About half the time should be devoted to acquiring ability to use books and drawings, to gaining a knowledge of principles, and an acquaintance with and an understanding of Mathematics, Science, Geography, History, Literature and the duties, rights and privileges of citizens.

About half the time should be devoted to training in "doing things" as indicated; and it would be entirely advantageous to have things made that have commercial or economic values.

Types of Schools similar to those in this Division which should be studied from Part III in connection herewith:—

Trade Preparatory Schools as reported upon at Leeds and Halifax, England;

Classes at Tynecastle Workshop Schools, as reported on at Edinburgh, Scotland;

Trade Preparatory School, at Belfast, Ireland;

Practical Schools of Commerce and Industry (Industrial Section), France;

Pre-Apprentice School, Paris, France;

The Independent Industrial Schools of Massachussetts as represented by the School at Newton, Mass.;

Vocational School, Springfield, Mass.;

Intermediate Industrial Schools of New York, as represented by the Schools at Rochester, N.Y.;

Seneca Vocational School, Buffalo, N.Y.;

State Trade School, Bridgeport, Conn.

Where products are sold.

The Commission regards it as undesirable that schools maintained at the public expense should be used for the production of commodities, or the doing of work, in such a way as to injure private business through competition in selling such products or for the purpose of making profit from the labor of the students. Two facts have been brought to the attention of the Commission: (1) the actual amount of products which goes on the market from Industrial Schools, where such products are sold, is never as large in quantity as the volume of products which the same young persons would be the means of turning out, if they were employed in the commercial factories or shops instead of being at the Industrial School; (2) the work is not of inferior grade, but is often of a higher standard of finish than similar output

from commercial shops, because a greater amount of labor has been expended in order that the students might have the kind of experience that leads to thoroughness of workmanship and completeness of finish.

Division II.—Co-ordinated Technical Classes (or Schools).

Qualifications for admission:—

Age 14 to 16 years and over;

Completion of the work of the Elementary School or ability to read, write, draw, and calculate to the satisfaction of the Principal or the Committee on Admission.

Completion of one year in an Intermediate Industrial Class would be most advantageous.

Courses:—Four years.

Notes:—

The work and study should provide series of experiences at school arranged to fit in with the experiences at the workshop.

Preferably the whole of the first year to be devoted to school work. During that year the work to be done would be similar to that of the second year of the Intermediate Industrial Classes with particular regard, in the practical, operative, "doing things" part of the work, to the particular trade or occupation to be followed by the pupil.

Three years to be devoted to school and workshop experience, about half time to each, preferably alternating the attendance week about.

In cases of trades in which there are periods of slackness or "no work", the alternate periods might be made to suit the conditions of the trade. For example, in some of the building trades the summer months might be spent continuously at work, and some months in the winter continuously at school.

Types of Schools similar to those in this Division which should be studied from Part III in connection herewith:—

Part-time or Half-time Co-operative Industrial Schools of United States;

The Co-operative High School, Fitchburg, Mass.;

Co-operative Industrial School, Beverley, Mass.;

The Worcester Trade School, Worcester, Mass.;

The Co-operative High School, Cincinnati, Ohio;

Smith's Agricultural School and Northampton School of Technology, Northampton, Mass.

Division III.—Technical High Schools.

Qualifications for admission:—

Age 13 years and over;

Completion of the work of the Elementary School, or of the first year of the Intermediate Industrial School.

Courses:—Four years.

These would be provided in Departments of a General, or "Union", High School, or in separate High Schools according to the needs of the community. These might be arranged as:—General or Professional; Scientific; Commercial; Technical; Agricultural; Housekeeping; Fine Arts.

The General Department would provide general secondary education and prepare pupils for admission to Arts Courses in Colleges and to Normal Schools.

The Scientific Department would prepare pupils for admission to higher institutions, with a view to education for such professions as Medicine, the different kinds of Engineers (Civil, Chemical, Sanitary, Mechanical, Electrical, Mining, Rural), etc.

Note:—

The foregoing departments would be considered as part of general Secondary Education as now provided at High Schools and Academies under the Public School systems.

The Commercial Department would prepare pupils for entering upon occupations in business (Commerce, Transportation, Banking, Civil Service) and also for admisson to higher institutions.

The Technical Department with separate classes for boys and girls would prepare pupils for entering upon occupations in trades and industries. It would provide suitable school training for those who, after some years of practical experience, might become foremen and fill the directive positions in industries. Its course and work would differ from the Intermediate Industrial School in so far as the equipment for "doing things" and the doing of things by the pupils would have more regard to enabling them to understand the principles underlying mechanical and industrial operations than to preparing them for entering workshops or factories at the age of 15 or 16. As compared with the Intermediate Industrial School it would put emphasis on wider and more thorough knowledge of principles, mathematics and sciences by means of its 4 year course.

In towns where there were not enough pupils for the two kinds of classes, the first year of this Department might serve the purposes of the Intermediate Industrial classes.

The Agricultural Department would give courses and training similar to those of the Rural High School. (See page 256).

The Housekeeping Department would give general vocational education for Homemaking and Housekeeping, and would prepare for admission to higher institutions.

The Fine Arts Department would work for the inclusion and realization of fine art (beauty in form, colour and composition), in the work in all the Depart-

ments, and would also prepare pupils to enter upon occupations as designers, photographers, painters, sculptors, etc. It would also prepare pupils for admission to higher institutions.

NOTES:—

In general the training at this school would prepare pupils for entering upon occupations at 17 or 18 years of age and for admission to higher institutions.

Whether the Commercial, Technical and Housekeeping Classes should be Departments of a "Union" High School or be conducted in separate premises under separate staffs, are matters to be determined by the Local Development Board in view of local conditions.

In Germany the common practice is to have Technical Education carried on by staffs of teachers different from those who conduct general education, and usually in separate buildings.

In the United States the opinion seems to be divided between having "Union" High Schools which include the different departments, and Special High Schools for Commercial, Technical and Housekeeping instruction respectively.

In Canada careful consideration should be given to what Provisions would be necessary and desirable for Co-ordinated Technical Classes as under Division II and Middle Technical Classes under Division III 'for those who have gone to work.'

Types of Schools similar to those in this Division which should be studied from Part III in connection herewith:—

Borough Polytechnic Institute, London;
Galashiels Technical College, Galashiels, Scotland;
Technical Schools and Science and Art Classes, Ireland;
Municipal Technical Institute, Belfast, Ireland;
Technical Schools in France:
- Higher Practical Schools of Commerce and Industry, at Paris;
- Grenoble;
- Nancy;
- Lyons;

Realschulen and Oberrealschulen of Germany;
Technical High Schools of the United States:
- Boston High School of Mechanic Arts;
- Buffalo, N.Y.;
- Cincinnati, Ohio;
- Cleveland, Ohio;
- Los Angeles, Cal.;
- Newton, Mass.;
- Providence, R.I.;

Technical High Schools at Montreal, Que., Toronto, Ont., and Winnipeg, Man.

Division IV.—Apprentices' Schools.

Qualifications for Admission:—

Age 15 years and over;

Completion of Elementary School course or ability to read, write, draw and calculate to the satisfaction of the Principal or the Committee on Admission.

Completion of the two years of the Intermediate Industrial Classes would be most advantageous.

Separate schools for youths and young women.

Courses:—One to four years, depending upon the character of the trade and the established custom of the trade in regard to apprenticeship.

Types of schools similar to those in this division which should be studied from Part III in connection herewith:—

Artane Industrial School, Dublin, Ireland;

Apprenticeship Schools of France: Paris;

The School for Iron Workers and Mechanics at Winterthur, Switzerland;

The School for Carpenters at Zurich, Switzerland;

The David Ranken, Jr., School of Mechanical Trades, St. Louis, Mo.;

The Hebrew Technical Institute, New York City;

The Lick and Wilmerding Schools, San Francisco, Cal.;

New York Trade School;

North End Union School of Printing for Apprentices, Boston, Mass.,

Williamson Free School of Mechanical Trades, near Philadelphia. Pa.;

Trade Schools for Girls and Women.

Notes:—

There is a difference between a real trade-teaching school, where apprentices learn the whole of the trade, and the so-called Trade Schools of Germany. The Trade Schools of Germany are really Technical Schools where most of the instruction is intellectual and theoretical, given during from six to ten hours per week to pupils who spend the rest of the time in workshops, learning the trade and earning wages.

The Trade Schools of England are schools which give Vocational Education to qualify young people to enter upon the learning of the trade in a workshop, or are technical institutions in which men and women, who already have acquired practical ability in the trade, attend classes to receive instructions in Mathematics, Science, Drawing and other branches connected with their chosen occupation.

There is also an essential difference between an Apprentices' School where apprentices learn the whole of the trade, and the schools for apprentices in various works and shops, such as those of Railway Companies, the General Electric Company at West Lynn, Mass., Brown & Sharpe's, Providence, R.I. In the case of these workshop schools the apprentices are taken from six to twelve hours per week in the class-room under competent instructors to supplement the experience which they obtain in the workshop practice.

The Commission does not recommend the establishment of real trade-teaching schools in Canada to be maintained by public funds. When experience has been gained as to the suitability and effectiveness of the Co-ordinated Technical Schools under Division II, whereby the learner spends part of his time in an earning capicity at practical work and the other part in the classes of a school, the question can be reviewed to advantage.

The Commission is of opinion that where practical workshop experience can be obtained by the young learner, that is a better training for industrial efficiency than where the whole of the training is obtained under school conditions. There is a disciplinary and intellectual result to the pupil from the necessity of observing workshop hours and workshop discipline, and conforming to workshop requirements for effectiveness, thoroughness and speed of labor.

Division V.—Industrial and Technical Institutes.

Notably in Germany, Denmark and Ireland, nearly every urban community has a Municipal Technical Institute. Provision is made in these in some cases for classes from the preparatory stage upwards. In most cases the Municipal Technical Institute takes students who have already had two years of Continuation Classes at other centres.

Types of Schools similar to those in this division which should be studied in connection herewith:—

Municipal Technical Institutes in England, such as those at Manchester, Leeds, Halifax, Barrow-in-Furness, Accrington and Widnes.

Municipal Technical Institute at Belfast, Ireland, and smaller places in Ireland.

Somewhat similar in part of the work would be the Lower and Middle Technical Schools of Germany, and the Technikum at Chemnitz.

Division VI.—Technical, Home Economics and Fine Arts Colleges.

Qualifications for Admission:—

Completion of the course at a recognized Secondary School, or ability to read, write, draw and calculate, with foundation knowledge and previous training to the satisfaction of the Principal or the Committee on Admission.

Separate institutions for men and women or separate departments in the same institution.

Courses:—As in Faculty of Applied Science at the University of Toronto; McGill University; Polytechnic School of Laval University, Montreal; etc.

Types of Institutions similar to those in this Division which should be studied in connection herewith:—

University of Leeds;

University of Sheffield;

Imperial College of Science and Technology, London;
Central Institutions at Edinburgh, Glasgow and Aberdeen, Scotland;
Royal College of Science, Dublin, Ireland;
Institutions in France;
Technical High Schools of Germany;
Commercial High Schools of Germany;
Massachusetts Institute of Technology, Boston, Mass;
Cooper Union, New York City;
Royal College of Art, London;
Provincial Schools of Art in England:
- Bradford;
- Leeds;
- Leicester;
- Manchester;

Schools of Art, Dublin and Belfast, Ireland;
Schools of Fine Arts in France;
Margaret Morrison Carnegie School for Women, Pittsburgh, Pa.;
The Technical College, Halifax, N.S.;
McGill University, Montreal, Que.;
Polytechnic (Laval University), Montreal, Que.;
University of Toronto.
School of Mining (Queen's University), Kingston, Ont.

FOR THOSE WHO HAVE GONE TO WORK IN URBAN COMMUNITIES.

Division I.—Continuation Classes (or Schools).

According to the needs of the community and the occupations of the pupils the Continuation Classes would be arranged for pupils to take Courses in one or more groups as underneath. There would be further differentiations in the Industrial and Technical group to meet the particular trades and callings, as in the German Continuation Classes for Building Trades, Metal Trades, Textile Trades, etc.

The groups might be as follows:—

(1) General;
(2) Industrial and Technical;
(3) Commercial;
(4) Housekeeping.

The Classes might be organized and conducted,—

(*a*) In connection with the Public School System;
(*b*) In separate buildings;
(*c*) In connection with Municipal Technical Institutes or Schools;
(*d*) By Voluntary Associations or other agencies.

UNION ARRANGEMENTS.

Continuation Classes 'for those who have gone to work', in all or any of the four Groups, might be arranged for,—

(1) In connection with Classes or Schools 'for those who are to continue at school' and described as:—

Division I. Intermediate Industrial Classes (or Schools).
" II. Co-ordinated Technical Classes (or Schools).
" III. Technical High Schools.
" IV. Apprentices' Schools.
" V. Industrial and Technical Institutes.
" VI. Technical, Home Economics and Fine Arts Colleges.

(2) In connection with Classes or Schools 'for those who have gone to work' and described as:

Division II. Co-ordinated Technical Classes (or Schools).
" III. Middle Technical Classes (or Schools).
" IV. Apprentices' Classes (or Schools) in Workshops.
" V. Industrial and Technical Institutes.

When any of these aforementioned Classes (or Schools) are being arranged for, or organized and equipped, full consideration should be given to the question of Continuation Classes in connection with them.

The Continuation Classes are organized in connection with the public school system in a few of the States of Germany, in England, in Scotland, at Cincinnati, Ohio, at places in Nova Scotia, at Montreal, Que., Toronto, Ont., and Vancouver, B.C.

Continuation Classes are organized in separate buildings and under separate management in the large cities in several of the States of Germany.

Continuation Classes are organized in connection with Technical Institutes in the cities and larger towns of England, Scotland and Ireland, and also at some of the Universities, notably the Universities of Sheffield and of Leeds.

Continuation Classes are organized by Voluntary Associations and partially supported by public funds, as for example, by the Guilds of Germany, by the Council of Arts and Manufactures in Quebec, and by Y.M.C.A's.

This matter is treated in various places in Part III of the Report more particularly as follows:—

England:
Manchester;
Leeds;
Halifax;
Sheffield;
Barrow-in-Furness;
Accrington;
Widnes.,

Scotland:
Edinburgh;
Glasgow;

County of Fife;
Cowdenbeath;
Hawick Technical Institute;
Galashiels Technical College.

Ireland:
Belfast;
Kilkenny;
Portadown.

France:
Courses under Syndicates in Paris.

Germany:
Bremen;
Chemnitz;
Continuation Schools at various places such as;
Aix-la-Chapelle;
Berlin;
Cologne;
Dresden;
Frankfurt;
Stuttgart.
Also special schools for Machine and Metal Workers;
Building Trades;
Textile Industries;
Art for Industrial Trades;
Commerce.

United States:
Boston, Mass.;
Buffalo, N.Y.;
Worcester, Mass.;
Cincinnati, Ohio.

Special Schools:—
Schools for Miners;
Schools for Fishermen;
Schools of Navigation;
Schools for Tanning and Leather Industries.

(1) GENERAL CLASSES.

These would enable young persons over elementary school age, who have gone to work, (a) to go on with the general work of the elementary school, or (b) to supplement it by such education as would be given in the general department of a Secondary School.

The classes would be in the day or evening; and it is desirable that not less than 6 hours per week should be given to them.

(2) INDUSTRIAL AND TECHNICAL COURSES.

Day and Evening Classes:—

6 to 10 or more hours per week.

Qualifications for admission:—

Age 13 years and upwards;

Completion of work of the Elementary School or ability to read, write, draw and calculate to the satisfaction of the Principal or a Committee on Admission.

Completion of two years of the Intermediate Industrial Classes would be most advantageous.

Classes for workers as follows:—

(*a*) Apprentices and other learners;
(*b*) Skilled workmen and workwomen;
(*c*) Foremen and Superintendents.

Separate classes for boys, men, girls and women.

Courses of two kinds:—

(1) Chiefly theoretical, with special reference to the occupation of the pupil and co-ordination with the work of his occupation at the time;

(2) Chiefly practical, with at least half the time to practice in handwork and operations with tools and machines, to widen the range of skill and knowledge.

In general the Courses should be made to suit the occupations and the populations of the area served, and where practicable should be arranged progressively to continue for a period of three or four years or more.

Both kinds of Courses should provide also for studies in Literature, History and the duties, rights and privileges of citizens, and for Physical Culture and Singing.

The work in each of the Courses should be arranged as far as practicable on problems, projects or interests, each of which would become a centre for correlated study of several subjects, such as Mathematics, Science, Composition, etc. A Project-Study is not the same thing as the study of separate subjects as such.

(3) COMMERCIAL CLASSES.

These might be organized in connection with the public school system, and might be added to or developed in connection with the Commercial Department of a High School or Academy, or might be provided in separate premises.

The classes would be in the day or evening.

(4) HOUSEKEEPING CLASSES.

These might be organized on a plan similar to the Industrial and Technical Classes. The Courses should be arranged to suit the needs and meet the convenience of the girls and the women in the area to be served.

It is highly important that Vocational Classes for young women, devoted to instruction and training for Housekeeping occupations, should be provided in all the cities and towns. Attendance at these during at least one period per week should be continued until after 18 years of age unless the girl is receiving some other form of education. Particulars regarding this kind of education will be found in Chapter X on Schools for Housekeeping.

DIVISION II.—CO-ORDINATE TECHNICAL CLASSES (OR SCHOOLS).

Qualifications for admission:—

Age 14 to 16 years and over;

Completion of the work of the Elementary School or ability to read, write, draw and calculate to the satisfaction of the Principal or the Committee on Admission.

Completion of at least one year of the Intermediate Industrial Classes would be most advantageous.

Courses:—Four years.

NOTES:—

The work and study should provide series of experiences at school arranged to fit in with the experiences at the workshop.

Preferably the whole of the first year to be devoted to school work. During that year the work to be done would be similar to that of the second year of the Intermediate Industrial Classes with particular regard, in the "doing things" part of the work, to the particular trade or occupation to be followed by the pupil.

The following three years to be devoted to school and workshop experience, about half time each, preferably alternating the attendance week about.

For the workers in trades in which there are periods of slackness or "no work", the alternate periods might be made to suit the conditions of the trade. For example, in some of the building trades the summer months might be spent continuously at work, and some months in the winter continuously at school.

Types of Schools similar to those in this Division which should be studied from Part III in connection herewith:—

Part-time or Half-time Co-operative Industrial Schools of United States;

The Co-operative High School, Fitchburg, Mass.;

Co-operative Industrial School, Beverley, Mass.;

The Worcester Trade School, Worcester, Mass.;

The Co-operative High School, Cincinnati, Ohio;

Smith's Agricultural School and Northampton School of Technology, Northampton, Mass.

Division III.—Middle Technical Classes (or Schools).

Qualifications for admission:—

Age 15 and over;

Experience of not less than one year actually working at a trade or skilled occupati n;

Ability to read, write, draw and calculate to the satisfaction of the Principal or the Committee on Admission;

Assurance that the applicant will devote not less than one school term to Day Classes.

Separate classes for boys, men, girls, and women.

Courses:—One, two, three and four years.

Classes for workers as follows:—

(a) Apprentices and other learners;
(b) Skilled workmen and workwomen;
(c) Foremen and Superintendents.

The Courses would provide for series of experiences in proper sequence, arranged to enable the student to acquire:—

(1) A wider knowledge of the principles underlying the operations or the processes of the trade or business;

(2) A wider range of knowledge and skill in the handling of materials, the use of tools, the operation of machines and the manufacture and construction of products.

Notes:—

The full-time classes would be as above indicated, with Continuation Classes in the day or evening for those who are at work and unable to attend in the day time continuously.

In towns and the smaller cities the Courses of this school might be given in connection with the scientific and industrial departments of a Technical High School, or they might be organized in separate premises.

It is necessary to distinguish between the kind of instruction and demonstration to be provided for adult pupils, who have had considerable experience in practical work, and the kind of educational help to be given to pupils at Intermediate Industrial Classes and Technical High Schools.

When the adult pupils meet the Instructor they know the "How" of some industrial operations. They need chiefly instruction, by way of explanations, information and study, to enable them to understand the "Why," and some opportunity to acquire wider skill and technique. On the other hand, it is desirable that the young pupils, who are without practical experience of workshops, should be put to working out problems for themselves rather than that they should receive full information in a pre-digested state.

Types of Schools similar to those in this Division which should be studied from Part III in connection herewith:—

Polytechnics and Monotechnics in London, England;
Municipal Technical Institutes:
Manchester;
Leeds;
Halifax;
Barrow-in-Furness.
Central Institutions in Scotland;
Cowden Beath Mining School, Scotland;
Galashiels Technical College, Scotland;
Municipal Technical Institute, Belfast, Ireland.
France:
Courses under Syndicates, Paris;
National Schools of Arts and Trades;
Lower and Middle Technical Schools of Germany;
The Technikum at Winterthur, Switzerland;
Lowell Textile School, Lowell, Mass.,
New Bedford Textile School, Mass.;
Schools for Miners;
Schools for Fishermen;
Schools of Navigation;
Schools for Tanning and Leather Industries.

FOR WOMEN ALSO.

A Middle Technical School should provide special Courses and Classes for Housekeeping, particularly for women who can devote from 3 months to one year continuously to attendance at classes for the purpose of qualifying as houseworkers and housekeepers for private homes or for institutions. (See Chapter X.)

DIVISION IV.—APPRENTICES' SCHOOLS IN WORKS OR SHOPS.

Types of Schools similar to those in this Division which should be studied in connection herewith:—

Classes in the shops of the Canadian Pacific Railway Company at Montreal, Que.;

Classes in the shops of the Grand Trunk Railway Company at Stratford, Ont.;

Classes in the shops of the General Electric Company, West Lynn, Mass.;

Classes in the shops of Brown & Sharpe, Providence, Rhode Island.

DIVISION V.—INDUSTRIAL AND TECHNICAL INSTITUTES.

Types of schools similiar to those in this Division which should be studied from Part III in connection herewith:

Municipal Technical Institutions of England:
- London;
- Manchester;
- Bradford;
- Leeds;
- Halifax;
- Barrow-in-Furness;
- Accrington;
- Widnes.

Central Institutions in Scotland:
- Glasgow;
- Edinburgh;
- Aberdeen;

Municipal Technical Institutes in Ireland: Belfast; Kilkenny; Portadown.
Lower and Middle Technical Schools of Germany;
Technikum at Chemnitz, Germany;
Cooper Union, New York;
Carnegie Industrial Schools, Pittsburgh, Pa.

DIVISION VI.—EXTENSION LECTURES AND CORRESPONDENCE-STUDY COURSES.

These should be provided in connection with Technical Institutes or Technical, Housekeeping and Fine Arts Colleges, or in connection with other Central Institutions.

It is in every way desirable that systematic courses of instruction and study should be provided in such subjects as Industrial History and Economics by means of Extension Lectures and Courses of Reading. The work undertaken in the Oxford University Workingmen's Classes might be taken as illustrative of what should be attempted. That form of Oxford Extension work was based upon a Report of a Joint Committee of the University and Working-class Representatives on the relation of the University to the Higher Education of Workpeople submitted in 1908.

It is highly important that the natural leaders of industrial workers should have opportunities for thorough instruction in and study of the fundamental principles which underlie the organization of industries and society.

The arrangement of the several Courses of Correspondence-Study for industrial workers might with advantage follow the general lines which have been found successful in the work of the International Correspondence School, of Scranton, Pa.

The Correspondence-Study Courses should be supplemented by Travelling Instructors.

The University of Wisconsin has begun work which might be taken as a guide towards what should be included in Correspondence-Study Courses as soon as competent men are available.

These Courses would be especially for the benefit of those who live in places where the pupils were too few to make the organization of classes practicable.

FOR RURAL COMMUNITIES.*

Division I.—Intermediate Rural Classes (or Schools).

Qualifications for admission:—

Age 13 years and over;

Completion of the work of the Elementary School, or ability to read, write, draw and calculate to the satisfaction of the Principal or a Committee on Admission.

Some of the Classes separate for boys and girls.

Courses:—Two years of 5 to 7 months each at the school and the rest of the year at a farm or home, according to local conditions.

The kind of work to be done at the school would provide for series of experiences in proper sequence and have regard to the conditions of farming and housekeeping in the locality.

Note:—

In cases where the teacher is not qualified to direct and estimate the progress and value of the work of the pupils in the Farming-Projects or the Housekeeping-Projects, a committee of one, two or three should be appointed to co-operate with the teacher. The District or County Instructors provided for under Divisions III and IV, would be competent to counsel on what to do and how to do it in these educational projects. They could assist in co-ordinating the Farming-Projects and the Housekeeping-Projects with the work at the school.

In general, the teaching at this school would prepare pupils for engaging in farming and housekeeping occupations, and for admission to the 3rd year of Rural High Schools.

Division II.—Rural High Schools.

Qualifications for admission:—

Age 13 years and over;

Completion of the work of the Elementary School or ability to read, write, draw and calculate to the satisfaction of the Principal or a Committee on Admission.

Some of the Classes separate for boys and girls.

Courses:—Four years.

During the first two years the work to be done would be similar to that in the Intermediate Rural School, with the difference that the work at this school might continue longer each year.

*For a fuller discussion of the following Provisions, see Chapter IX on Education for Rural Communities and Chapter X on Schools for Housekeeping Purposes.

The work to be done at the school would provide for series of experiences in proper sequence and have regard to the conditions of farming and housekeeping in the area served by it.

Science subjects would be taught particularly in the relation of their application to rural work, rural problems, and the principles underlying the systems, methods and operations of farming and housekeeping.

On the literary, social and cultural side, special attention should be given to Language, Literature, History, Physical Culture, Singing and such experiences as make for the enrichment and efficiency of intellectual and social life in rural districts.

NOTES:—

In cases where the teacher is not qualified to direct and estimate the progress and value of the work of the pupils in the Farming-Projects or the Housekeeping-Projects, a committee of one, two or three should be appointed to co-operate with the teacher. The District or County Instructors, provided for under Divisions III and IV, would be competent to counsel on what to do and how to do it in these educational projects. They could assist in co-ordinating the Farming-Projects and the Housekeeping-Projects with the work at the school.

In general, the training at this school would prepare pupils for engaging in rural occupations and housekeeping and for admission to Agricultural, Housekeeping and Arts Colleges.

DIVISION III.—RESIDENT OR TRAVELLING COUNTY OR DISTRICT INSTRUCTORS FOR FARMING.

These Instructors would carry on work similar to some of that undertaken at present by District Agricultural Representatives in Ontario and Quebec. It would be extended, according to the condition of the district, along the following lines:—

1. They (the Instructors) should act as advisers in co-ordinating the school work and the Farming-Projects carried on at home by pupils attending the Intermediate Rural Schools and the Rural High School.

2. They should arrange for short Courses of instruction for young men who do not attend an Intermediate School or the Rural High School.

Such Courses might be given at one place during two half days in the week.

That plan would enable the District Travelling Instructor to conduct one Course at each of three centres concurrently.

The Courses should be arranged in progressive sequence, and a Course of reading should be provided in connection with each Course.

3. They should provide systematic short Demonstration Courses in soils, crops, live stock, farm machinery, etc., etc., for the adult farming population.

4. As soon as practicable they should be associated with the work of a Neighborhood Improvement Association and an Illustration Farm for the locality, similar to those arranged for by the Committee on Lands of the Commission of Conservation.

NOTES:—

It is necessary to distinguish clearly and continuously between the kind of instruction and demonstration to be provided for adult pupils who are actually engaged in farming work, and the kind of educational help to be given to pupils at the Intermediate Rural Schools and the Rural High School.

When the adult pupils meet the Instructor they have had considerable experience in the doing of things, and know the "How" of farming operations. They need instruction, information and guidance to enable them to understand the "Why" of farming operations, and require suggestions, explanations and information concerning methods of management and the principles that underlie systems and methods of farming, such as preserving the fertility of soil, selection of seeds, controlling weeds, rotation of crops, management of live stock, etc.

On the other hand, it is desirable that the Instructor should let the young pupils work out problems in Farming-Projects as part of the Course to gain series of experiences arranged in proper sequence. His main helpfulness would come from giving the work to be undertaken as a Farming-Project a didactic or educational setting, from directing the sequence in which different Farming-Projects should be taken up, and by indicating sources whence the necessary information might be obtained. It is better in the case of young pupils that they should dig it out for themselves than that they should have full information presented in a pre-digested state in a lesson package.

One of the District Instructors might become a County Superintendent, supervising and correlating all the Industrial Training and Technical Education for development work within a county or larger area. After the first year or two, more than one Instructor would be required in an ordinary county area.

DIVISION IV.—RESIDENT OR TRAVELLING DISTRICT INSTRUCTRESSES FOR HOUSEKEEPING.

These might carry on work, for the housekeeping interests of the district, similar to that undertaken by the Resident or Travelling District Instructors for Farming.

1. As a beginning, a Travelling Instructress in Housekeeping might meet a class of women arranged for by a Women's Institute, or other similar organization in the locality, one half day per week for a term of 20 weeks.

The other half of the same day the Travelling Instructress might carry on work with the girls and teacher in the school (Elementary, Intermediate or High) of the locality.

2. They (the Instructresses) should be connected, in an advisory capacity, as Co-ordinators for the Housekeeping-Projects carried on at home by the pupils attending the Intermediate Rural Schools and the Rural High School.

3. They should provide demonstration lectures in cooking and housekeeping work, chiefly as a means of directing public attention towards channels along which systematic educational work could be conducted.

4. As soon as practicable, they should be associated with the Short Courses of a County or District School or a County Housekeeping School.

5. As soon as practicable, they should be associated with the work of a Neighborhood Improvement Association and an Illustration Farm for the locality, similar to those arranged for by the Committee on Lands of the Commission of Conservation.

NOTE:—

It is important to bear in mind that there is an essential and fundamental difference between the kind of instruction and demonstration suitable for the women and that which would be advantageous to the girls in school. Practically what is said in Notes after Division III applies here.

After the first year or two, more than one Instructress would be required for an ordinary county area.

DIVISION V.—COUNTY OR DISTRICT AGRICULTURAL AND HOUSEKEEPING SCHOOLS.

These Schools would serve the rural population to some extent as the industrial population of the towns would be served by the Middle Technical Schools for apprentices, skilled workmen and workwomen, foremen and superintendents.

Courses:—One or two years, and also short Courses of from one to three months for special subjects and industries.

The Courses would provide for a series of experiences in proper sequence, arranged to enable the student to acquire:—

(1) A wider knowledge of the principles underlying the systems, methods, operations and processes of their special occupation;

(2) A wider range of knowledge and skill, in the actual management of soils, crops, live stock, products and homes; in the use of machines, tools and utensils; and in the making of things.

NOTES:—

It is necessary to distinguish between the kind of instruction and demonstration for those who are practically adult pupils, and who have had considerable experience in practical work, and the kind of educational help to be given to pupils at Intermediate and Rural High Schools. When the adult pupils meet the Instructor they have had considerable experience in the doing of things and know the "How" of farming operations. They need instruction, information and guidance to enable them to understand the "Why" of farming operations, and require suggestions, explanations and information concerning methods of management and the principles that underlie systems and methods of farming, such as preserving the fertility of soil, selection of seeds, controlling weeds, rotation of crops, keeping live-stock, etc.

On the other hand, it is desirable that the young people at the Intermediate Rural and Rural High Schools should work out problems in Farming-Projects as

part of the Course. To them the teacher's main helpfulness would come from giving the work to be undertaken as a Farming-Project a didactic or educational setting and directing the sequence in which different Farming-Projects should be taken up, and by indicating whence the necessary information might be obtained. It is better, in the case of young pupils, that they should dig it out for themselves than that they should have full information presented in a pre-digested state in a lesson package.

These County or District Agricultural and Housekeeping Schools would be residential schools, and would be suitable places at which to provide Short Courses and Special Courses in such branches as Dairying, Fruit, Vegetable and Flower-growing, Poultry-keeping, Bee-keeping, etc.

Division VI.—Young People's Social Service Schools.

The People's High Schools of Denmark have supplemented the general education of the Elementary Schools. Their object has been to develop social and patriotic qualities of a high order in individuals and communities. The Agricultural Schools grew out of them. They help to increase the attendance at all the Vocational Schools. They are regarded by the Danes themselves as among the chief factors in conserving and promoting national prosperity and strength.

They are Schools in which the pupils are in residence. The young men attend during 5 months in winter, the young women during 3 months in summer.

The Schools, in most cases, are owned and carried on by private individuals under the supervision of the State. They receive small subsidies from the Government. They charge fees. A large number of Scholarships provided by the State are available to young men and women. These Scholarships provide about one-half the total cost to a student for fees which include board and living accommodation, etc. Ordinarily, as many as one-half of the pupils attending a School may be there on Scholarships.

There are about 70 People's High Schools in Denmark. It is estimated that about 7,000 young people attend them annually. That is equal to about one in every five of all the young people who come to 18 years of age annually in the rural population.

It would appear to be highly desirable that schools of this type should be established for the rural population in Canada. A beginning might be made by providing courses for young women at a few existing institutions, such as Agricultural Colleges, or other residential schools or colleges during summer vacation periods.

They might also be organized in connection with County or District Agricultural and Housekeeping Schools, as under Division V.

Qualifications for admission:—

Between 18 and 25 years of age;

Educational attainment and character to the satisfaction of the Principal or a Committee on Admission.

Courses:—From 3 to 5 months.

The young men and young women would not be in residence at the same time.

The Courses should be arranged and given for the purpose of cultivating and developing a sense of responsibility for life and its opportunities, social efficiency, public spirit and devotion to the country.

Emphasis should be laid upon Canadian and British History, Literature, Ability to use Books, Singing, Physical Culture, and Social Service in the community. In this connection see extended Report on People's High Schools of Denmark in Part III.

Division VII.—Schools for Agricultural Apprentices.

Such schools on the Continent of Europe, in Ireland, and to a limited extent in England, pay particular attention to the training of pupils in manual dexterity and familiarity with the ordinary operations of farm work, such as ploughing, seeding, stacking, threshing, etc. The report on the Agricultural Apprentices' School at Clonakilty, in Ireland, gives as full information as may be necessary in this connection.

Only in the portions of Canada where settlement is comparatively new are Farm Schools for the purpose of teaching the ordinary farming operations necessary. In the older districts, before a pupil is admitted to the County or District Agricultural School, he should have spent long enough at practical farm work to have learned all the operations thoroughly. At the same time it is to be remembered that the actual practice of farm work in many parts of Canada is greatly below the standard of ordinary practice in England, Scotland, Germany, France and Denmark. The remedy for this state of affairs can only be gradual and comparatively slow. It may, perhaps, best be brought about through the co-ordinated Farming-Projects in connection with the Intermediate Rural School and the Rural High School. The influence and instruction of the Travelling Instructors would doubtless also have a marked effect on the skill and effectiveness with which the farm work is done.

FARM SCHOOLS.

The proper place at which to learn farming is a farm, managed as a business concern to provide a living and competence for the owner or worker. Farm Schools, where young men would learn how to do the work of farmimg and the methods of management, would be advantageous for people who have come to Canada from other countries without any experience of farm work under conditions similar to those of Canada or with implements and tools like those used in Canada. Particularly in the districts which are being settled by those who come from countries whose climatic or soil conditions and farming methods are different from those of Canada, it would be advantageous if a farm such as an "Illustration Farm" could be designated to receive such people for short Courses, lasting from a week at a time up to a longer period, according to their needs.

The Commission recommends for such districts an Illustration Farm on a plan somewhat similar to those arranged for by the Committee on Lands of the Commission of Conservation. It might be the headquarters of a Travelling Instructor. To supplement the information and advice which such an Instructor could give on their own farms, he could meet the newcomers in groups from time to time at the Illustration Farm, to give illustration and demonstration of the operations and methods of farming suitable to the district and to the resources of those who are settling in it. The waste of time which often occurs, the loss of crop which sometimes ensues, and the disappointment for a period of one or more years which frequently comes to the beginner, might be in a large measure prevented. Whatever would accomplish that would be of economic advantage to the whole community not merely from the immediate saving and prevention of loss, but from the ability, knowledge and spirit resultant in these new settlers. The benefit would be to the individuals themselves, to their community, and to the business and transportation interests.

Division VIII.—Agricultural and Home Economics Colleges.

The work of Agricultural Colleges in Canada is discussed at length in Chapter IX on Education for Rural Communities.

In the United States extension work and the training of teachers for Agricultural Schools and for the teaching of agriculture in Secondary Schools have become important features. The University of Wisconsin is a notable example of what may be undertaken in that respect.

Types of Colleges similar to those in this Division which should be studied in connection herewith:—

Ontario Agricultural College, Guelph, Ont.;

Macdonald College, Que.;

Manitoba Agricultural College, Winnipeg, Man.;

The Agricultural Colleges of Cornell University and of the Universities of Wisconsin and Illinois.

Division IX.—Correspondence-Study Courses.

These should be provided in connection with Agricultural Colleges and Housekeeping Colleges, or in connection with other Central Institutions.

The Correspondence-Study Courses might be supplemented by Travelling Instructors, and by Reading Courses.

The University of Wisconsin, which has begun work in this field, offers useful guidance.

These Courses would be specially for the benefit of those to whom it would not be convenient to attend classes arranged for by a District Instructor.

SECTION 2: LOCAL AND PROVINCIAL DEVELOPMENT AUTHORITIES.

General Considerations.

1. It is important to adopt a plan which will secure the largest degree of *public confidence* and maintain the largest measure of *public interest and co-operation*.

2. It is important to adopt a plan which will preserve *Provincial control*, encourage *local initiative* and develop *local responsibility*.

3. It is important that there should be a *large number of persons* representing Manufacturing Industries, Trades, Commerce, Transportation, Agriculture, Forestry, Mining, Fisheries, Housekeeping and Education, *ready to take the initiative* in local undertakings and *able to co-operate* in making effective application to the needs of localities of financial grants and any other assistance. In the opinion of the Commission, a policy which would be applied wholly or mainly by directive authority from headquarters, leaving to local centres little initiative or responsibility, would not accomplish much for a long time.

4. It is important that there should be in each Province *a Central Body or Authority*, which could bring to bear on all proposals from local centres the wide knowledge and practical experience of *capable men and women* familiar with education and with industrial, agricultural and housekeeping problems. Such a Central Body would be able to supply information for the guidance of Local Authorities at the beginning of their work, and to furnish advisory assistance through experts of high ability. Through the meetings and discussions of such a Central Body the permanent officials charged with the administration would be kept in touch with public opinion as to the particular needs of localities, as to the *suitability and acceptability* of schemes proposed, and as to the practicability of having such schemes supported and carried out. The Central Body would also serve the purpose of *a clearing house* through which an intimate knowledge of the results from experience in one locality would be made available to other communities.

5. It is important to adopt a plan whereby the Dominion, the Provinces, the Localities and Individuals will *co-operate and each contribute* in some well-considered and equitable proportion *to the cost* of Development Undertakings. A plan of organization which provides for the financial support from Communities being properly articulated with financial grants from Central Authorities would tend to bring about *efficiency and stability*. A long time is required to realize upon educational work; and continuity of effort to meet recognized needs is essential. The plan should be such as would ensure concurrent progressive action in the same direction by the Central and Local Bodies. Provision should

be made for *Efficiency Audits*, in order that each Contributing Authority may be assured that the money is being used for the purpose for which it is granted, and that the work is being well done.

6. It is important to adopt a plan which will ensure that the *national interests* as well as the local points of view will be considered.

7. It is important that there should be a *Dominion Consultative Body*, through which the widest knowledge and experience could be put at the service of all the Provinces and thus be brought to bear on problems and undertakings of consequence to them all.

8. It is important that there should be *a Dominion Authority* competent to co-operate with Provincial Authorities, to provide *expert counsel* to any Province which might not be adequately organized or staffed to render service in that respect to all localities and industries within its borders, and to promote *scientific industrial research* and the diffusion of knowledge resulting therefrom.

THE COMMISSION'S RECOMMENDATIONS.

The Commission recommends that Local and Provincial Development Bodies be constituted as follows:—

I.—Local Urban Industrial Development Boards.

II.—Local Rural Development Boards.

III.—Provincial Development Councils.

IV.—Provincial Development Commissions.

The Commission further recommends the constitution of,—

V.—A Dominion Development Conference.

VI.—A Dominion Development Commission.

VII.—A Dominion Development Fund.

I.—Local Urban Industrial Development Boards.

Duties:

1. To consider by what means Industrial Training and Technical Education may be applied most advantageously to the development and improvement of workers, industries and occupations within the areas served by them severally.

2. To make proposals, applications or recommendations to a Provincial Development Council, or any other Authority constituted by the Provincial Government as competent to deal with such proposals.

3. To provide and maintain Industrial Training and Technical Education by means of institutions, classes, courses or otherwise, subject to the regulations of the Government of the Province.

4. To provide Vocational Guidance for the youth of the area by such means as they may think fit.

5. To administer any Grants received for any of the aforesaid objects.

Constitution:

As provided for by each Province by Order-in-Council or by legislation.

SUGGESTIONS:—

Each Board to be appointed preferably by the local education or municipal Authority; or if not wholly so appointed, then to the extent of two-thirds by the local Authority or Authorities, with one-third appointed by the Provincial Authority for Industrial Training and Technical Education.

Each Board to include one or more members of the Local Education Authority and to represent:—

(1) Employers and Employees in Manufacturing Industries, Trades, Commerce, and where they are important, Mining, Fisheries and Transportation;
(2) Housekeeping;
(3) Education.

Having regard to the desirability of continuity of policy, appointments to be made preferably for a term of years, a proportion of the members retiring every year, and being eligible for re-appointment.

It would likely be found expedient for each Board to constitute Committees for the more effective carrying on of its work. The main divisions would obviously be Industrial, Housekeeping, and Vocational Guidance, with such further divisions or sub-divisions as might be thought desirable.

II.—Local Rural Development Boards.

DUTIES:

1. To consider by what means Industrial Training and Technical Education may be applied most advantageously to the development and improvement of workers, of agriculture, rural industries, housekeeping and occupations in rural communities, within the county or other areas served by them severally.

2. To make proposals, applications, or recommendations to the Provincial Development Council or any other Authority constituted by the Provincial Government as competent to deal with such proposals.

3. To provide and maintain Industrial Training and Technical Education by means of institutions, classes, courses or otherwise, subject to the regulations of the Government of the Province.

4. To administer any Grants received for any of the aforesaid objects.

CONSTITUTION:

As provided for by the Province by Order-in-Council or by legislation.

SUGGESTIONS:—

It would appear to be desirable, where local conditions permit, that a county area should be the area served by the Local Rural Development Board. In some cases it might be found expedient to combine one county with another, or with part of one or more other counties.

Each Board to be appointed, preferably two-thirds by the education Authorities or the municipal councils of the area served, with one-third appointed by the Provincial Authority for Industrial Training and Technical Education.

Each Board to represent:—

(1) Agriculture;
(2) Industries;
(3) Housekeeping;
(4) Education.

Having regard to the desirability of continuity of policy, appointments to be made for a term of years, a proportion of members retiring every year and being eligible for re-appointment.

It would likely be found expedient for each Board to constitute Committees for the more effective carrying on of its work. The main divisions would obviously be: Agricultural, Rural Industries, and Housekeeping, with such further divisions or sub-divisions as might be thought desirable.

III.—Provincial Development Councils.

Duties:

1. To consider systems and schemes of Industriaî Training and Technical Education for the development and improvement of workers, industries, agriculture, housekeeping and occupations within the Province.

2. To make recommendations to the Provincial Development Commission or to the Government of the Province in that connection.

3. To do such other things as may be required by the Government of the Province in relation to Industrial Training and Technical Education.

4. To make recommendations to the Dominion Development Commission.

Constitution:

As provided for by the Province by Order-in-Council or by legislation.

Suggestions:—

Two-thirds of the members might be elected by Local Development Boards, and one-third appointed by the Provincial Government to represent:—

(1) Manufacturing Industries, Trades, Commerce, Mining, Fisheries and Transportation, (employers and employees);
(2) Agriculture and Forestry;
(3) Housekeeping;
(4) Education.

Or

Members might be all appointed by the Provincial Government to represent interests as aforesaid.

Appointments or elections to be preferably for a term of not less than six years, a proportion of the members retiring every two years, and being eligible for re-appointment or re-election.

A Provincial Development Council would doubtless find it expedient to forward its work by means of committees, such as Industrial Committee, Agricultural Committee and Housekeeping Committee, with such further divisions or sub-divisions as might be found desirable.

IV.—Provincial Development Commissions.

Duties:

1. To consider what may be necessary for or advantageous to the development and improvement of workers, industries, agriculture, housekeeping and other occupations within the Province by means of Industrial Training and Technical Education.

2. To co-operate with the Provincial Department of Education and with other authorities within the Province for the organization, administration, and maintenance of Industrial Training and Technical Education within the Province.

3. To provide the service of experts for advising with Local Authorities and for other purposes as might be expedient.

4. To inspect and report upon the work of all classes, schools and institutions in respect to which any grant is made from public funds for Industrial Training and Technical Education; and to make recommendations to the Provincial Government in respect to the administration of any Grants or other assistance in aid of Industrial Training and Technical Education.

Constitution:

Members to be appointed by the Lieutenant-Governor-in-Council.

SECTION 3: DOMINION DEVELOPMENT BODIES AND FUND.

V.—A Dominion Development Conference.

Duties:

1. To consider questions of Industrial Training and Technical Education for the development of the Dominion in respect to workers, industries, agriculture, housekeeping, and occupations, referred to it by Provincial Development Councils, or any other Authorities constituted by Provincial Goverments

in this relation, and to advise each Provincial Authority in regard to such questions.

2. To consider and report upon questions referred to it by the Dominion Development Commission.

CONSTITUTION:

Representative members:—

(a) Elected representatives of Provincial Development Councils.

Suggested basis of representation: 3 members from each Provincial Council, plus one member for each 300,000 population, or fraction thereof above 300,000, in the Province as determined by the latest decennial census.

Official members:—

(b) One member of each Provincial Government, or a Deputy accredited by him.

(c) One member of each Provincial Development Commission.

(d) Members of the Dominion Development Commission.

VI.—A DOMINION DEVELOPMENT COMMISSION.

DUTIES:

1. To co-operate with Provincial Development Commissions and Councils, Local Development Boards and any other Authority constituted by a Provincial Government for the development and improvement of industries, agriculture, housekeeping and occupations by means of Industrial Training and Technical Education.

2. To provide experts, whose services for counsel would be available to Provincial and Local Authorities.

3. To promote scientific Industrial Research and the diffusion of knowledge resulting therefrom.

4. To provide and maintain and to assist in providing and maintaining Central Institutions to supplement the work carried on by the Provincial and Local Development Authorities, if and when such Central Institutions are approved by the Dominion Development Conference.

5. To make recommendations for the administration of the Dominion Development Fund.

6. To report to the Governor General in Council, or to a Department of the Dominion Government.

CONSTITUTION:

Members to be appointed by the Governor General in Council.

VII.—A DOMINION DEVELOPMENT FUND.

The Commission recommends that the sum of $3,000,000 be provided annually for a period of ten years by the Parliament of Canada and paid annually into a Dominion Development Fund.

NOTES:—

1. Not less than 75% of the amount paid each year into the Dominion Development Fund, from the above source, to be divided into nine portions, in proportion to the population in each of the nine Provinces as determined by the latest census, and alloted to each Province accordingly for Development Undertakings therein. Each of the said nine portions of the Fund to be administered as the "(Name of the Province) Account of the Dominion Development Fund"; and the remainder of the Fund to be administered as the "General Account of the Dominion Development Fund."

2. Any portion of the Fund alloted to a Province which may remain unearned or unpaid at the expiration of any fiscal year, to be carried forward and remain in the Account of the Province until required for Development work within such Province.

3. Any portion of the Fund in the "General Account" which may remain unexpended at the expiration of any fiscal year to be carried forward and remain in the "General Account" until required for Development work upon the recommendation of the Dominion Development Commission.

4. Payments to be made to Development Authorities in any Province, from the funds in the Account of such Province and from the funds in the "General Account", only upon the recommendation of the Dominion Development Commisssion.

5. In order that a Provincial Government or Local Development Authority may be entitled to receive a payment from the funds in a Provincial Account of the Dominion Development Fund, it will be necessary:—

(a) That the *Service* (that is, the Development Undertakng proposed by a Development Authority) and the *Budget*, for the fiscal year for which the payment is intended, shall have been approved by a Provincial Development Commission or other Authority constituted by the Provincial Government for that purpose; and that a copy of said *Budget* and a copy of a certificate of approval by the Provincial Authority of the proposed *Service* shall have been received by the Dominion Development Commission.

(b) That a certificate shall have such been issued by a Provincial Development Commission or other Authority recognized by the Provincial Government as competent to make an Efficiency Audit, to the effect that the said Development Authority is administering the *Service* adequately and efficiently and in accordance with the authoritative regulations; and that a copy of said Certificate of the Efficiency Audit shall have been received by the Dominion Development Commission.

6. In any case where a Development Authority has not maintained and carried out the *Service* (that is, the Development Undertaking provided for in the *Budget*) adequately and with reasonable efficiency, the certificate of the Efficiency Audit shall state the extent to which the Undertaking was not maintained and carried out in an efficient and satisfactory manner; and the certificate

shall also state whether the Development Authority is taking any steps to remedy any such deficiencies as exist.

7. If the Dominion Development Commission is not satisfied that the Development Authority is maintaining and carrying out the *Service* adequately and with reasonable efficiency, it may at its discretion deduct such amount as it thinks fit from the amount of the Grant from the Dominion Development Fund that would otherwise be payable, and give a certificate declaring its dissatisfaction and the amount of such deduction, and in that case only the amount of the Grant so reduced shall be payable to the Development Authority in question.

8. Before a payment can be made for a Development *Service*, in the second or any subsequent year of its progress, a duly audited statement in detail of the receipts from all sources for the maintenance of the said *Service* and of the actual expenditure upon said *Service* for the preceding fiscal year shall have been received by the Dominion Development Commission .

9. The Treasury may accept gifts into the Dominion Development Fund for all or any of the purposes for which payments may be made from the Accounts of the Provinces or the General Account.

Summary of the Uses of the Fund.

Payments should be directed to secure as speedily as is practicable:—

1. The service in each Province of an adequate supply of persons (teachers, instructors, demonstrators, executive workers) properly qualified to carry on Industrial Training and Technical Education.

Suggestion:—75% of the cost of training, or of securing otherwise, might be paid.

2. The establishment or extension and maintenance of Classes, Courses, Schools or other institutions or means for Industrial Training and Technical Education.

Suggestion:—A proportion of the salaries of teachers, instructors, demonstrators and executive workers according to approved *Budgets* might be paid, varying from one-half in cities, to two-thirds in towns, and three-quarters in villages and rural districts.

3. The provision of suitable and adequate appliances, apparatus and equipment for teaching purposes, but not including school buildings, furniture, or consumable supplies.

Suggestion:—75% of approved *Budgets* might be paid.

4. The provision of Scholarships to equalize opportunities to young people and other workers to profit by Classes, Courses, Schools or other institutions.

5. The provision of experts with experience in Industrial Training and Technical Education whose services for counsel would be available to Provincial and Local Authorities.

6. The service of Central Institutions, when and where required to supplement the work carried on by the several Provincial and Local Development Authorities, either by providing and maintaining or by assisting in providing and maintaining such Central Institutions.

7. The promotion of Scientific, Industrial and Housekeeping Research and the diffusion of knowledge therefrom.

CHAPTER VIII: INDUSTRIAL TRAINING AND TECHNICAL EDUCATION IN RELATION TO APPRENTICES, FOREMEN AND LEADERS.

In Germany, France, England, Scotland, Ireland and elsewhere the avowed aim of Industrial Training and Technical Education is not only to increase the working or productive efficiency of the pupil, but to develop all his powers, to prepare him for citizenship, to improve the industries, and to render the conditions of living more satisfying. The interests of the pupils, parents, employers, the community and the State are all considered. Even when compulsory attendance at Continuation Classes is exacted, there is a definite purpose of using the school as a means to raise the whole community to a higher level of intelligence, ability and goodwill.

SECTION 1 : APPRENTICES.

Apprenticeship is Disappearing.

The altered conditions of industrial work, by the organization of production through factories, have revealed the insufficiency of the traditional methods of education to meet these new conditions. New means and new opportunities are required to provide for apprentices and workmen the instruction and training for their trades. The employers are no longer able to supply those as the old master did to his apprentices.

Owing to the highly organized manner in which many industries are now conducted, and the specialization of the workers upon particular parts of the factory processes, experience of workshops alone is not a sufficient teacher for industrial efficiency. In former years the apprentices, by doing a greater variety of things, acquired the wide experience which developed technical understanding as well as skill of hand. In many factories nowadays the experience of the learner is only the doing of one thing over and over again for prolonged periods.

The use of machines reduces the need for a wide range of skill in handwork. As the division of labor becomes more and more extreme, there is less need as well as less opportunity for the training of the all-round mechanic. The all-round mechanic is master of his work to a far greater extent than the handy laborer or machine tender.

Workshop and School Need Each Other.

Where the factory system has been developed young men, who are to work with their hands, have a less advantageous position and opportunity after school

than they had formerly under apprenticeship. Even in a new country like Canada, where the demand for unskilled labor is usually great in summer, they begin to feel the disadvantage. Too few of them learn to do skilled work which offers security of employment at good wages.

The applications of science to industry seem to require that the workers shall possess technical knowledge for which the opportunities in the factory do not provide, although the technical training must be carried on in close touch with the practical work. Instruction in the theory, apart from participating in the actual practical work, does not qualify the young worker. Even where technical instruction is provided in school, that alone cannot make up for the absence of systematic training outside the school. What is needed can be obtained by a combination of effort on the part of the employers, the employees and the schools. The farm, the workshop and the factory may each be utilized and improved, as commercial investments and as educational means or instrumentalities. It would thus be practicable to make the most of the further application of science to industry without sacrificing the opportunity for personal efficiency of the worker. Parents, employers and State must all unite to protect young people by providing opportunities for them to develop into good workmen and good citizens.

The School Must Supplement the Shop.

It is a common saying that apprenticeship is now dead. That is true in the sense that the form of the apprenticeship, with a contract specifying the duties of both sides, is now the exception rather than the rule. From a study made of this question in France about ten years ago it was learned that only about one-tenth of the boys in trades had any contract at all as apprentices.

Among the causes of the disappearance of apprenticeship under a contract are mentioned the extreme division of labor, the indifference of masters who no longer require the all-round mechanic, the new opportunities of ready employment for boys at relatively high wages, and the short-sightedness or indifference of parents who are more anxious to have the boy earn as high wages as practicable, from the beginning, than to learn a trade which would serve him in his maturity. The boy himself is not, at that age, with his judgment, will, and conscience only partially developed, a good judge of what is best for himself. In this connection it seems desirable that the school authorities, or some body such as a Local Development Board or a Vocational Committee, should come to his help.

The schools in most cases have done little to direct the attention of the youth towards the occupation to be followed or to stimulate him to seek qualification for it. They have been directed towards the vocational education of teachers, officials, professional people and the leisure class. They must now adapt themselves to the needs and circumstances of existing society, most of whose members are productive or conserving manual workers or workers with machinery.

A new system of apprenticeship must make provision that apprentices, or learners of trades, will be cared for in both the employers' establishments and in the Vocational School, and that there shall be general instruction and training as well as particular training for the occupation.

The Essentials for Progress in Efficiency.

After a boy has begun to earn his living, his attitude towards the means of further education has much to do with its power to serve him and its success. If he sees or thinks he sees that the subjects and work are all practically useful to him, he will believe in the school, and in consequence the school can do much more for him. Such a school, while aiming directly to increase his efficiency as a worker and a contributor through work, will nourish a proper pride in his work and skill, thus making him a better citizen. From the lessons on citizenship he will be intelligently aware, not only of his rights and duties as a member of the trade or craft, but also that his craft or trade has an honorable history. From that point of view he recognizes himself as not only a worker, to obtain all the wages he can get, but as a member of an ordered community and nation, and that the well-being of all is bound up together.

While the feature of the school, which appeals most strongly to the young apprentice, is the opportunity which it provides to enable him to become a better workman and to earn higher wages, those who have organized Continuation Schools, and those who carry them on, do not neglect the information and training which make for good citizenship. The endeavor to give instruction of a general character, without particular reference to the occupation of the boys, was not successful anywhere for any large proportion of the young people. It was not until the courses of study and work were made to centre around the occupation of the pupil that the schools began to meet the situation.

For these Schools teachers are required who have special qualifications for the practical and technical parts of the work. While the qualifications of the teachers include ability, from training and experience, for giving instruction in the technical subjects and technical part of the work, it is necessary that they should possess broad general knowledge and professional spirit regarding the occupations or trades which they represent. While the curriculum should afford the student the right training for some specific occupation, the industrial and technical training for that purpose should be woven also into the course of study of the general educational system.

National Education Association.

The following are extracts from the Report of the National Education Association of the United States on *The Place of Industries in Public Education:*—

"17. The basic standard of judgment should be its (education's) effect upon the health, efficiency and intellectual vigor of the youth of the nation. Until educators and school authorities are ready to accept these fundamentals, 'groping in the dark' and confusion as to essential principles will continue.

"18. With the progress of time the ideal of personal culture has been largely modified or replaced by that of efficiency. According to this aim education concerns itself with preparing for life rather than in cultivating all the powers of the child.

"If education is to prepare for life, it must begin by preparing to make a livelihood, and the vocations of the vast majority of those whom a democratic society would educate involve forms of handwork and industry in which the school can give an extensive training. Such training is becoming increasingly necessary because of changes in the industrial life that tend to check or to destroy the apprentice system, and because this life is continually becoming more complicated and difficult to understand without specially direct study. Thus the school is being forced to take up vocational training in a great variety of occupations hitherto prepared for adequately in other ways, for the negative reason that the other ways are disappearing, and the positive one that it alone is capable of furnishing a training suited to modern needs."

Wide Aims of the School.

The objects of the Continuation Schools of Scotland, as set forth in Circular 426 of the Scotch Education Department, embody what we found to be the dominant aim in all countries which we visited. These are as follows:—

(1) The maintenance and improvement of the health and physique of young people.

(2) The broadening and refining of their interests and sympathies by the influence of good literature.

(3) The equipping them with a competent knowledge of some craft, industry or occupation which offers a reasonable chance of providing a means of livelihood in adult years.

(4) The inculcation of the responsibilities and duties of communal life as well as of its rights and privileges.

Industrial and Technical Training alone may promote merely the egotistical or greedy and selfish side of man. It is recognized as necessary that the school work should widen the knowledge of other trades and even of other nations, and enhance the individual's appreciation of his duties as well as his rights in the community and the nation. The Elementary Schools cannot do this fully, principally because of limitation of time and the age of their pupils. The Continuation Schools can and should do it.

In addition to the regular class-room work and shop practice of the Continuation Schools, efforts are made to develop the social capacities of the pupils. The pupils are encouraged to make use of books out of the public libraries. Interesting as well as instructive lectures are provided, and there are walks and excursions for pleasure as well as for acquiring information.

APPRENTICESHIP IN GERMANY.

Germany has reorganized the old-time apprenticeship system and combined it with Continuation Schools having courses directly related to the occupations, and has also reorganized the Trade Guilds chiefly for the purpose of improving apprenticeship. In that country there is considerable conflict between the two systems of industry—the factory system for production on a large scale and the

handicraft system for small trades. The change from the handicraft system to the factory system is looked upon by many as a real misfortune. Such persons hold that the increased volume of trade and apparent prosperity are not adequate compensation for the loss to the community in the altered character and attitude of the producing workers.

In many trades in Germany it is still the proper thing for a boy, who has his living to earn, to learn a trade and to do it in the old-fashioned way by means of apprenticeship. There, as in Canada, there is some doubt regarding the profitableness of apprentices; and some shops, believing them unprofitable, refuse to take them and recruit their forces from men trained elsewhere.

Apprenticeship papers are a contract binding on both parties, which neither may break except for the most serious reason, although it may of course be dissolved by mutual consent. Apprenticeship commonly begins at the age of 14, which marks the close of the compulsory full-time school period. The term varies between 3 and 4 years. At the same time men of mature years may be trained as operators of special machines without the signing of apprenticeship papers.

Trade Guilds in Germany.

Since 1881 there have been a succession of laws in Germany, giving voluntary Guilds of various trades a privileged position, and in some measure transferring from the State itself to the Guilds the care of the organization of labor in the small trades. By the law of 1897 the main provisions regarding trade Guilds, journeymen, and apprentices were consolidated and some important changes were made.

Persons carrying on trades on their own account can form Guilds for the advancement of their common trade interests. The chief objects of these Guilds are: (a) the cultivation of professional pride among the members of the trade; (b) the maintenance of friendly relations between the employers and their employees; (c) the assistance of unemployed journeymen to find work and aiding them during the period of their non-employment; (d) the making of all regulations and conditions of apprenticeship and caring for the technical and moral education of apprentices; (e) the adjustment of disputes between members of the Guild and their apprentices.

In seeking to attain these objects the Guilds are recommended to proceed by the following means:—

(1) Establishing and developing good standards of character and conduct (in industry and morals) of masters, journeymen and apprentices, and particularly the maintaining of technical schools and the framing of regulations for their administration;

(2) Determining the qualifications of persons who may become masters and the conditions under which they may become such and examinations in connection therewith;

(3) Creating a fund to assist members of the Guild, their families, journeymen, apprentices and helpers in cases of sickness, death, etc.;

(4) The organization of tribunals for arbitration, to take the place of the ordinary arbitration authorities, for the adjustment of disputes between members and their employees;

(5) The formation of a general business organization to advance the trades for which the Guilds exist.

Membership in the Guilds cannot be refused to anyone fulfilling the legal and statutory requirements, nor can anyone be admitted without fulfilling those conditions. In the main the membership is limited to the following:— (1) Persons who practise in the district on their own account the trade for which the Guild was created; (2) Those who hold the position of foreman or a similar office in an establishment; (3) Those who have fulfilled the conditions of those two classes but have ceased to work without taking up any other trade; (4) Handicraftsmen working for wages in industrial and agricultural pursuits; (5) Other persons admitted as honorary members.

The Guilds and Schools.

When the Guild undertakes to maintain a technical school, the local authorities usually place a suitable building at its disposal and also heat and care for it. Usually they also give a grant towards its maintenance. The Instructors for the most part are members of the Guild who are actually following the trade. That keeps the instruction close to the actual needs of the trade. As these schools come more and more under the control of the public authorities the course of study and work is being broadened to develop the qualities of the students as individuals and as citizens.

First Attempts of Continuation Schools.

As long ago as the middle of the last century many of the ordinary Sunday schools in Prussia, Wurttemberg and Baden were converted into Trade Sunday Schools, that is, schools where those who had begun to learn their trade could receive theoretical and educational instruction to supplement the knowledge which they acquired in the shops. The first results with such Continuation Schools were not satisfying or encouraging. That was due, chiefly, to the fact that the teachers were the Elementary School teachers and their methods were not suited to the more advanced age and experience of their pupils. It was only when the courses of study and work were made to centre around the occupation of the pupil, and teachers were appointed with special qualifications, that the schools began to go forward and to realize the purpose for which they were intended. Then for a time the stress laid upon the technical and occupational needs of the pupils seemed likely to prevent the schools from serving their purpose in improving the citizenship. During the last ten years more attention has been paid to providing in the schools the kinds of experience which will realize all the objects and possibilities.

The Law as to Apprenticeship.

The law regarding apprenticeship shows a keen solicitude on the part of the State for the preservation of the apprenticeship system, whereby the apprentices shall be thoroughly trained for their work. It defines those persons who have the right to engage apprentices, specifies the length of the apprentice period, makes provision for the apprentice being admitted to the examination for a journeyman's certificate, and provides for the constitution of the examining boards, consisting of a president appointed by the Chamber of Trades and representatives of the Guilds and of the Journeymen's Commission. It outlines the duties of the employer in relation to the apprentice. These are chiefly as follows:—He must instruct the apprentice in all matters relating to his trade, require him to attend an industrial or trade Continuation School, make sure that he applies himself zealously and conducts himself properly, seek to guard him against the formation of bad habits and to protect him from ill-treatment. The employer must personally direct the work of the apprentice or place him under the direction of a competent person charged with his special instruction.

The Guilds provide for an Apprenticeship Commission. Its duty is to see that the conditions of apprenticeship are carried out faithfully on both sides. For this purpose they visit the shops at least once a year to satisfy themselves in respect to those matters.

This subject is dealt with more fully in the Report on Germany.

SECTION 2: FOREMEN AND LEADERS.

Different Kinds of Efficiency.

All the evidence which has come to the Commission indicates that workers who have been trained in a shop or factory, in connection with the instruction and experience of Industrial and Technical Courses, are more efficient than those who are not so trained. The wages which the technically educated earn are confirmation of that.

While the interests of the employer and the employee alike require efficiency in the doing of work, it is recognized more and more that there is a difference between industrial efficiency and technical efficiency. Industrial efficiency may represent ability to do work quickly and well, while technical efficiency may represent ability to plan, to understand, and so to direct the activities and operations to advantage. There is an essential difference between industrial technique and industrial intelligence, as there is between skill of hand and the scientific spirit in work. As far as possible the aim of Industrial Training and Technical Education should be to develop both kinds of ability. From them result power and willingness to render efficient service.

Tendency to Leave Manual Work.

The remark is frequently heard that Technical Education makes men desire to leave industrial and technical work which involves manual labour.

When the desire exists it may come from ambition to reach a position which is better paid and which is generally regarded as giving a higher social status. When a man from the shops seeks to qualify for the draughting room, or a clerking position, the Technical Classes will give the requisite knowledge and training.

At the Technikum at Chemnitz the question of providing a one-year course, directly planned to improve the ability and skill of the workmen in their craft, has been under consideration for the purpose of correcting or counteracting the tendency of the two-year course to make those who take it leave the skilled occupations of the workshops. In other places efforts are being made to counteract the desire to leave the manual occupation by providing more handwork in connection with the classes, and more opportunity whereby the pupil would widen his range of skill and knowledge by the use of materials, tools and machines.

At bottom the question seems to be similar to that arising from the courses of study in Elementary and Secondary Schools. It has been urged that the absence of opportunity to participate in handwork, and to acquire ability and skill to do it well, has caused the pupils to lose interest in and turn away from occupations of a constructive and handworking kind. The remedy does not seem to be through withholding intellectual instruction, but rather through making all the studies have an evident relation to some form of constructive manipulative work in which the student is directly interested through his occupation. The only way to make a man like his work is to make him understand it thoroughly and to possess the ability to do it well.

In reply to a question as to whether the Continuation Schools made the pupils turn from handwork, Dr. Kerschensteiner of Munich said that it depends on the organization of the school. If the school is so organized that a pupil can attain more manual skill in doing artistic work, he gets to love the artistic work more and more; but everywhere schools have been too theoretical. The teacher is constantly seeking to make his instruction wider and more thorough, and thus pushes the pupil, at first unintentionally, beyond the limits of artisanship. But as it is impossible for a trade to flourish which is being automatically drained of its most intelligent members, it must be a fundamental principle, in the organization of all technical schools, to preserve the pupils' joy and interest in personal manual work. Dr. Kerschensteiner insisted that it is constantly necessary to advise the pupils on leaving school not to crowd into the offices, but to seek positions in the workshops, which stand higher in repute and be better paid than the former.

Qualities Required in Foremen.

Of course a number of men as they gain experience are promoted upward to positions as foremen. It is through skilled labor of the mechanical sort that the majority of young men advance to and enter the rank of managerial labor. The development of aptitude and ability for management is not dependent upon formal training of any kind. Successful management requires qualities of personality, of temperament and of force of character. Training cannot produce those, although it may improve the power of them for application.

Another element of managerial ability is the social product of intercourse with others, particularly the social results of games, and of participation in the activities of clubs and other organizations. A third qualification rests upon and arises from thoroughness of knowledge of all the facts which make up the situation to be managed, and of the relation between these facts and of the significance of each of them.

The qualities required in foremen are,—to get the largest output of work from the men under them; to keep the plant in good working order and as fully occupied as practicable; to maintain shop discipline and a state of goodwill and friendliness among the workers; and to carry on the work with such co-operation with the foremen in other departments, and in accordance with the instruction and policy of the full establishment, as to make for low cost of product and for quality and finish of product up to the standards required.

Similar qualities of temperament and character are required in the superintendents in addition to the knowledge, scientific spirit and power of judgment which have been developed by the course of training and study at the higher institutions for technical education or by practical experience in work. In the case of some superintendents, practical experience in the work enables them to make such use of the instructions and knowledge, obtained at Evening Classes and Technical Institutes, that the sum-total of their knowledge and ability equals or even excels the qualifications of those who have received a longer and more thorough school education but are without much practical experience of workmanship or management.

TRAINING OF MASTER WORKMEN.

A great deal of provision is made in Germany for the further training of apprentices who have completed their course and become full journeymen. These courses are provided either in connection with the Continuation Schools or other schools which go under the name of Fachschulen or Werkmeister Schools. There is also liberal provision for the further training of masters. In Prussia in 1900, the sum of 97,000 marks was provided for the organization and support of Master Courses and for exhibitions of machinery and tools for the commercial industries of Hanover and Posen. The appropriation for 1908 in Prussia, for eight institutions giving Master Courses, amounted to 767,698 marks. In the same year 40,790 marks were provided for shorter courses, and 32,261 marks for special Master Courses in the Technical Schools. The Prussian Government also contributed the sum of 142,246 marks to the support of exhibition halls containing all sorts of raw materials, fully and half manufactured materials, tools and special sorts of work, machines, etc.

The greater Master Courses continue from 4 to 6 weeks. The shorter Courses continue from 10 to 14 days. These latter are for the purpose of teaching special technique. The workmen often receive travelling expenses, and even wages, while attending these courses.

In connection with the exhibitions and industrial museums, lectures are provided by technical men at regular intervals, sometimes at the institution

itself and in other places in the district. Travelling instructors are also provided who go from place to place giving instruction in the handicrafts.

Dr. HERMANN SCHNEIDER'S OPINION.

Dr. Hermann Schneider, Dean of the College of Engineering, University of Cincinnati, is recognized as the foremost, as he was the first, leader in the movement for Co-operative or Co-ordinated Technical Education. The Commission is indebted to Dr. Schneider for much information of value furnished in discussions of the question. Part of that has been woven into the text of the Report in connection with Co-ordinated Classes or Schools. The following paragraphs are taken from his article "Education and Industrial Peace" as published in the Annals of the American Academy of Political and Social Science, November 1912.

THE LEADER.

The leader emerges from the mass. There is no known rule of heredity for personality, for intrinsic quality. There is a divine right of leadership, but it does not descend from father to son; it is conferred in utter disregard of wealth, creed, name, condition or caste —and it is non-transferable. The personality which creates leadership pushes instinctively above the dead level, above mediocrity; and the fight up through the mass is what gives the leader the strength to supplement personality.

EDUCATION AND THE LEADER.

The leaders who devise and direct in industry are usually men who left school when they were about fourteen years old and went to work at the bottom. Their schooling has consisted of elementary work in reading, writing and arithmetic. Plunged into the competitive struggle for a living, with nothing but their innate resources to fall back upon, their wits were sharpened and their natural gifts of planning for and directing others stood out in bold relief. They advanced step by step, acquiring the two main essentials for shop management, a detailed knowledge of practical shop processes and an expertness in handling men. Many of them have become well "educated," that is, well and widely informed and able to think solely by their own efforts.

It is entirely safe to say that our present system of organized education has had very little influence in the training of those who actually manage the operations in factories, except as it has furnished them material science as a tool of operation. This is not a surprising fact, for the brains and the personality necessary to leadership are just as likely to be born in the alley as on the avenue, and their chances for an accession of strength through overcoming obstacles are greater in the alley than on the avenue. And since the number of men graduating from college is almost a negligible percentum of those who grow up and work, the cause is obvious. So then our formally organized system of education has had little to do with the training of those who devise and direct industrial work. We (in education) do not train the industrial leaders; they are trained by industry itself. There are of course the usual exceptions.

EDUCATION OF THE LEADER.

Now since the leader emerges from the mass, and since he gives evidence of his leadership in industry rather than in the school, it is evident that education must seek some connection with industry to obtain him; and since the detailed knowledge of practical affairs essential to industrial management can be obtained only under industrial conditions the further need of a tie between education and industry is evident. Industry and education must work together, therefore, to meet the problem of industrial unrest, and each has its separate but co-ordinated functions. Industry through the competitive processes in its daily tasks searches out the leader and gives him his practical training. Education implants in him the three fundamental principles of sound building together with the necessary material sciences of his profession. Further, the need of this tie between education and industry is imperative since bread and butter necessities and parental misguidance drive thousands to work at an early age.

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Surely education can perform no greater service to humanity than to seek out men of ability and train them to devise and direct in such a way that life, liberty, and the pursuit of happiness shall be natural results of the day's work.

SCHOOL FOR INDUSTRIAL FOREMEN AT MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

While a great deal has been said of late years of captains of industry, the efficiency of the industrial arts depends in very large measure, and probably to a constantly increasing extent, upon the capacity of its non-commissioned officers—in other words, upon the foremen. These men receive the same education today as the ordinary mechanic, and it has been thought that it would be a great benefit to the community at large if they could have some instruction in the principles of applied science, so that they might understand more thoroughly the work they are superintending, and be ready to apply improvements. It is also felt that a better educated class of foremen would be a benefit to the community socially, as an intermediary class between the employer or engineer on the one hand, and the workmen on the other. To attempt to train young men separately for the positions of foremen would be, under the existing organization of labor, an impossibility. The foremen must continue, for the present at least, to be promoted from among the workmen. In giving them such an education as is desired, it is necessry to take men who are already working at their trade. As a rule instruction can be given to such persons only in the evening.

With this object it was decided seven years ago to substitute for the advanced Courses, which had been given by the Lowell Institute for a third of a century, a School for Industrial Foremen which is open, free of charge, to young men who are ambitious and well fitted to profit by the instruction; the term "Foremen" being used in its broad meaning.

To be admitted to the first-year Course the applicant must be at least 18 years of age, and must pass satisfactorily entrance examinations in Arithmetic (including the Metric System), Elementary Algebra, Plane Geometry, and Mechanical Drawing. These examinations may be, in a measure, of a competitive nature, and considerable weight is attached to the applicant's occupation and practical experience. The Courses are open to those only who are ambitious and willing to study. The character and amount of the instruction is such that, if the student is not well fitted to take up the work of the School,, it will not be possible for him to derive full benefit from the Lowell Course, or perhaps to maintain his standing.

The scholarship of the students, and their ability to continue the Courses, are determined in part by examinations, but considerable weight is given to the term's work. Those students who fail to keep well up with the work or to profit sufficiently by the instruction are informed that they are not qualified to pursue the Course advantageously. Those who complete satisfactorily the required Courses of the two years and pass the examinations are given graduate certificates.

The Courses of Instruction.

The School comprises, at present, two Courses, one Mechanical and the other Electrical. Each extends over two years. These Courses are intended

to bring the systematic study of applied science within the reach of young men who are following industrial pursuits and desire to fit themselves for higher positions, but are unable to attend Courses during the day. The subjects included in the Courses are as follows:

FIRST YEAR COURSE.

Mathematics	56 hours.
Physics	33 "
Electricity	28 "
Mechanism	34 "
Drawing	40 "
Total	191 hours.

The schedule for the first year is the same for both the Mechanical and the Electrical Course.

SECOND YEAR MECHANICAL COURSE.

Elements of Thermodynamics, the Steam Engine, and Boilers	38 hours.
Valve Gears	10 "
Applied Mechanics	38 "
Elementary Hydraulics	10 "
Testing Laboratory (Resistance of Materials)	12 "
Steam and Hydraulic Laboratory	24 "
Mechanism Design	12 "
Elementary Machine Design	60 "
Total	204 hours.

SECOND YEAR ELECTRICAL COURSE.

Elements of Thermodynamics, the Steam Engine, and Boilers	38 hours.
Valve Gears	10 "
Steam Laboratory	16 "
Direct Current Machinery	12 "
Alternating Currents	22 "
Electric Distribution	30 "
Electrical Testing (Laboratory)	24 "
Laboratory of Dynamo Electric Machinery	48 "
Total	200 hours.

It is the aim to adapt the Courses to the men for whom the instruction is intended and to include the study of those principles with which they are not likely to become familiar in practice, and which will give them a fundamental training in those matters that will be of the greatest value to them in the work in which they are engaged.

The instruction embraces recitations, lectures, drawing-room practice, and laboratory exercises. It is given by members of the instructing staff of the Institute of Technology. Many of the lectures are fully illustrated by apparatus and experiments. Written tests are given from time to time, and problems are assigned for home work at nearly every exercise. Text books are used in many of the subjects; but in some of the work, where the instruction differs widely from available books, printed notes are supplied to the students at cost.

CHAPTER IX: EDUCATION FOR RURAL COMMUNITIES.

INTRODUCTORY.

Canada is not wholly free from anxiety regarding the movement of population from the open country into towns and cities.

The total population increased from 5,371,315 in 1901 to 7,204,838 in 1911 or 34 per cent. From 1901 to 1911 the urban population increased from 2,021,799 to 3,280,444 or 62 per cent; the rural population in the same period increased from 3,259,516 to 3,924,394 or 20 per cent. That is to say, notwithstanding the opening up and occupation of vast areas of virgin land in the western Provinces, the total rural population of Canada increased during ten years by 664,878 while during the same period the urban population increased by 1,258,645.

A similar movement of population from the country to the towns is going on in the other countries visited with the exception of Denmark.

Among the undisputed factors which cause a flow of population from agriculture to other occupations are: (1) the use of improved machinery, whereby the number of units of human labor required on land to produce a given quantity of food is less than formerly; (2) the desire of some farmers to leave the rural parts for towns and cities to obtain what they think to be a better chance for the education of the children; (3) the fact that money circulates more freely in towns than in the country; (4) the attractiveness to young people of the amusements and excitements afforded by town and city life.

Qualities of Country Life and Agriculture.

Difference of opinion may exist as to remedies, but there is substantial agreement as to the desirability of having a large percentage of the population living in the country, engaged in agriculture and other rural occupations. Four chief considerations are urged in that behalf:

(1) Country life contributes to the virility of the race in body, mind and morals.

(2) Agriculture is a means of creating wealth annually out of the resources of nature without consequent exhaustion of the fertility of the soil. Countries where agriculture is centuries old, such as England, Scotland, France and Germany, report yields of crops higher on the average per acre than at any previous time in their history.

(3) Successful farming maintains a basis for prosperity in manufacturing, transportation and other businesses; and affords stable support to all prudent national undertakings.

(4) The increased cost of living in towns and cities is a pressing problem. A larger production of food-stuffs in Canada might not at once reduce materially

the retail prices; but the further organization of producers and consumers, for doing business closer together, would reduce the amounts which are absorbed during the progress of the food products from the farm to the consumer's table.

The chief forms of satisfaction which any worker seeks to obtain by labor are possession of material things, opportunity for social enjoyments, and pleasure from doing the work itself, in addition to the wages or money returns from the product. Whatever enables the rural population to obtain worthy satisfactions in these respects is to be sought for their benefit, and likewise for the advantage of the country as a whole.

Nothing can be done by legislation to compel people to stay in the country, but much may be done by education to cause them to prefer to stay there. The saying: "Where there is no vision the people perish" was never truer than at present in its application to the movement from the country and the attenuation of rural life in Canada.

Education by Self-Help.

Whether the movement of population at present flowing from rural to urban areas goes on, ceases, or takes an opposite direction, the rural communities for their own sakes are entitled to and must have education suited to the needs of all their members. Education cannot be conferred upon them; it may not be beneficially imposed upon them; it must be evolved by themselves by self-help, if need be by some measure of self-sacrifice, with the co-operating assistance of Governments.

The conservation of a vigorous, intelligent and prosperous population in the country stands out among the foremost duties of the whole nation; and any necessary burden of expense for that purpose might well be undertaken as a wise national investment. The practical ends to be aimed at, as likely to be effective for the accomplishment of the national objects, are summed up in the words attributed to Sir Horace Plunkett: "Better farming, better business, better living." Acceptable instruction, adequate education, capable leadership and hearty co-operation are necessary means.

In all progressive countries education is being adjusted to meet the needs of the children of the rural population, to interest them in rural life and to qualify them to follow it with advantage; and keen attention is being directed to means for the instruction and guidance of the adult population. France, Germany and Denmark are noteworthy examples of what has been done in that respect. More recently Ireland and England are bending their energies, in some measure successfully, towards the same end. The question is significantly prominent in the United States.

United States Country Life Commission.

In 1910 there was published, as a United States Senate document, the Report of the Commission on Country Life. In it attention is called to the desirability of a campaign for rural progress by the holding of local, State and even National

conferences on rural progress, designed to unite the interests of education, organization and religion into one forward movement for the rebuilding of country life. That Commission also recommends Nationalized extension work through the Colleges of Agriculture, in order to reach every person on the land with both information and inspiration. The Report says that such work should include forms of extension teaching by lectures, bulletins, reading courses, correspondence courses, demonstrations, and other means of reaching the people at home and on their farms; and that it should be designed not only to forward the business of agriculture, but sanitation, education, home-making and all the interests of country life.

New Use of Home Work.

As the rural home and farming provide educational opportunities, whereby children can be trained into ability for the work of after life by participating in it, it may not be necessary to equip the rural school with materials, tools and utensils for practical work towards vocational efficiency to the same extent as has become necessary in the city and town schools. A better result may be obtained at less cost by including Farming-Projects and Housekeeping-Projects, to be carried on by the children at their homes, as an integral part of the school course and work. These Educational-Projects would not be of the sort that would interfere with the work of the farm or the usefulness of the boy on the farm or of the girl in the home; and they should have certain defined limits in order that the pupil might receive educational advantage from carrying them on.

Home-Projects as Part of Course.

Examples of such Educational-Projects would be doing the work and keeping the records in connection with growing an acre of corn, a seed grain plot, part of an acre of potatoes, caring for a few cows, caring for a few sheep, looking after a flock of hens, etc.

In the housekeeping department, the Housekeeping-Project, or work to be done at home, might be followed from week to week or month to month, according to the suggestion and preference of the girl's mother. One week it might be a certain part of the housekeeping work in the morning or evening or on Saturdays. The point is to have the girl pupil recognize the defined limits of the Housekeeping-Project, in order that she may have a sense of responsibility for doing it completely and doing it well, and for having her effort and her progress in it recorded and credited to her as part of the educational progress of the week or month.

Expense and other serious obstacles in the way of providing and maintaining School Gardens and Domestic Science equipment, of such a character as to give the children full opportunity to learn by doing, would thus be obviated. The Home-Project plan would bring the educational plant of the farms and the homes to the use of the school, and secure the active co-operation of the parents

with the teachers in the industrial and technical education of the pupils for rural life. The School Garden would still have an important use, particularly in the education of the pupils between 8 and 12 years of age.

Co-ordinations between Farm, Home and School.

It would appear highly desirable that the rural teacher, after conference with the pupil and the parents, should, wherever practicable, arrange for some part of each day of the week, to be devoted by the pupil to carrying out some definite farming or housekeeping project upon the farm or at the home as part of the education. Even if the number of hours of attendance at the school building should be reduced to accomplish this end, that would seem wholly desirable in the interests of the pupil, of the home, of the farm work, of the school and of the teacher.

Such a division of work between the rural school, the farm and the home is similar to the co-ordinated work in the Co-operative or Co-ordinated Industrial Schools. Where it may be, from local conditions, out of the question to carry on much of this work with the Elementary School, it would be wholly desirable and advantageous to combine Farming-Projects and Housekeeping-Projects with the school work and study in the Intermediate Rural Schools and Rural High Schools. Home work ofthis sort would be a new connecting interest between the home and the school.

Teacher Should be Permanent.

The Commission is aware that to carry on the Rural School in the manner suggested would require a teacher of ability, a teacher who might reasonably be expected to continue in the service of the one school for a considerable number of years. Whatever would help to bring about that condition would be entirely advantageous and wholly desirable.

Particularly in technical schools of the highest order, such as the Industrial Art Schools, and also in other technical schools abroad, not only are regular instructors given permission to follow the occupation or art in connection with which they teach, and to earn remuneration for themselves thereby, but they are encouraged to do so, in order that they may be kept in direct and active touch with the practical and business side of the industry or art. If a good farmer properly trained and qualified could at the same time be a teacher of the Rural School, particularly the Rural High School, his efficiency as a teacher and his force and influence as a leader in the locality would be increased rather than diminished. Whatever would help towards the permanency of his tenure and service as a teacher in a locality would be advantageous.

Salaries and Residences.

If the salaries which the people of the locality are willing to pay are not adequate to secure that end it is wise to consider what other inducements, attractions, remunerations or satisfactions might be provided for the teacher. A school residence and grounds, part of which might be used for garden purposes

as in France, would help to retain the teacher and dispose capable young men to select teaching in the country as a permanent occupation. Particularly in the case of Rural High Schools, residences are an essential part of the educational equipment for rural communities, and under present conditions in Canada their erection and maintenance would be Development Work of great value and benefit to the State—doubtless more than Development Work which concerns itself only or chiefly with material resources and results from them.

The permanency of the service of teachers in Germany impressed the Commission as one of the strongest factors in what has brought about the efficiency of their schools. Whatever cost would be necessary, to ensure the training of the young people into ability for rural life and towards a liking for it, might be counted as a profitable investment on the part of the community and the State. Fortunate are the people who learn to use, and choose to use, their material wealth for the enrichment of life itself and the improvement of opportunities for boys and girls in the country.

The Other Interests to be Considered.

It is not enough that the adult population should be given assistance in matters directly concerned with their schools and occupations only. The experience of other countries reveals the distinction between the development of agriculture and the uplift of rural life. Every department of rural life must be taken into account.

The problems of the farm itself in regard to crops, fertility, weeds, labor and profits are foremost. Close beside them are the problems of the farm home. More than any other calling, farming is a mode of life as well as an occupation. Here the home plays an important part in the occupation as well as in the domestic and social life of the community.

The Rural School is capable of immensely greater service in ministering to the intellectual, social and spiritual needs of the population; and the instruction and training of the adolescent youth towards efficiency for rural life under educated, acceptable and capable leadership is an obligation of urgency and highest importance.

Greater facilities for, and a better public spirit towards, wholesome recreations are necessary. It is eminently important that the farming operations should be profitable; but that is not enough. It is necessary that rural life should be interesting and satisfying to young people. The exciting and even sensational entertainments and amusements of the town are a strong magnet on many natures. Competition in kind by the country in this field of distraction is neither possible nor desirable. Finer music is ever the attraction which prevails over the call of the sirens. And the taste for the pleasures of playing, working and living in the country, the capacity for helping to provide them, and the preference for staying there to enjoy them, are to be conserved and developed in youth.

Co-operation is Wholly Beneficial.

Organized co-operation in business has been found beneficial financially, intellectually and socially. Men and women, who associate themselves for business purposes to accomplish ends for their common good, gain respect for and confidence in each other as they come together. The natural leaders find their place of willing service for the community. The benefits to the locality are not opposed to personal advantage. Individual effort finds its best opportunity in the prosperous neighborhood; and prosperity which is shared adds to the richness of living as well as to the wealth which is possessed.

It is high time for Canada to recognize the difference between the primitive conditions of the undeveloped country and the complexities of advanced rural life in a democratic civilization. The way to satisfaction and success in rural life is by pooling the intelligence, the business ability and the social spirit of the neighborhood, and then, with local, Provincial and Dominion assistance, organizing that illimitable fund of self-help for application to the community.

The problems and needs of one neighbourhood are in their essence substantially the same as those of a township, a county, a province and the nation. The national problem is so large that it seems beyond the capacity of any individual or organization. On the other hand the betterment of the situation in one neighbourhood is within the power of those who live there. That may be advanced by community effort, competent leadership, financial assistance, and the enthusiasm which finds from " something attempted, something done," new confidence and strength for wider tasks unto the perfect day.

DIFFERENT KINDS OF PROVISIONS.

Before submitting a statement of the kinds of classes and schools for Agricultural and Housekeeping Education for rural communities in Canada, a brief survey is presented of some questions in connection with Rural Elementary Schools. What has been said earlier in this Report (pages 73 to 121) regarding general elementary education applies to rural as well as urban schools; and what is said in this Chapter under the heading: "*The Sompting School in Sussex*" is applicable in the main to town and city schools also.

After statements on the teaching of Agriculture in the schools of Ontario and the Consolidation of Rural Schools in the Dominion, a brief summary is given of some forms of Agricultural Instruction and of schools in Europe and the United States. The divisions of education as well as the organization of occupations have been carried further in European countries than in Canada. Institutions and organizations for Agricultural Education are so various in kind that it would not appear to be useful, even if it were practicable, to enumerate them all or to describe many of them in detail. Different forms of service meet the varying conditions in the different countries. Race qualities and traditions, customs, family, social and national ideals, as well as conditions of farming, have played important parts in shaping institutions and policies.

It is not intended to suggest that any form of Agricultural Education copied from abroad would serve adequately the community in the midst of which it might be established in Canada. The conditions of settlement, of farming, of roads, of social organization, of previous education and the habits of living are all to be taken into account. The name of the classes or school is of little consequence compared with the character of the work which is done. A study of the Reports on Ireland, Denmark, France and Germany is commended to supplement this Chapter.

The kinds of Provisions which are briefly considered here are as follows:

(1) Rural Elementary Schools.
(2) Winter Evening Classes or Schools.
(3) Various forms of instruction in Europe.
(4) County or District Agricultural and Housekeeping Schools of the United States.

What the Commission Recommends for Canada.

(5) Intermediate Rural Classes (or Schools).
(6) Rural High Schools.
(7) Resident or Travelling Instructors and Instructresses.
(8) County or District Agricultural and Housekeeping Schools.
(9) Young People's Social Service Schools.
(10) Schools for Agricultural Apprentices.
(11) Agricultural Colleges.

Educational work of a most useful kind is promoted by Students' Associations and Experimental Unions and also by Travelling Scholarships.

Closely associated with the Agricultural Schools and in some cases as an integral part of them are Schools of Housekeeping. The education of girls and women for rural occupations and in rural communities has been actively promoted by organizations of women. That question is reported upon under the different countries and also in a separate Chapter on Education for Housekeeping Occupations (p. 364).

SECTION 1: RURAL ELEMENTARY SCHOOLS.

Introduction.

It is generally accepted that the proper place at which to learn farming is a farm, managed as a business concern to provide a living and a competence for the farmer. It is not so generally recognized that the proper place at which to learn how to learn to farm is a school. The real object and meaning of the school and schooling is to put the pupil in possession of himself and of knowledge for effective use.

What is said in the beginning of this Report regarding Elementary Education is applicable to Rural Elementary Schools. The limitations in numbers of

children and in the resources of the community may prevent the full equipment of all Rural Schools to the extent which is desirable, but the underlying principles, of what is recommended for Elementary Education in Chapter I, may be applied in rural communities as well as in urban communities.

In the opinion of the Commission, it is of importance that the work of Rural Schools, from the elementary grades upwards, should be of such a character that the interests of the children in their surroundings and in the activities of rural life will be preserved, deepened and enlarged.

There is general agreement as to the need for bringing the curricula of the Rural Schools into touch with the practical life of those whom the schools serve. Recent years have witnessed the introduction of Manual Instruction to take its place beside the traditional intellectual instruction. It has not yet become generally clear to teachers, parents and pupils that intellectual instruction and intellectual culture of children can be advanced better and further by means of Manual Training, School Gardens, Nature Study, Domestic Science and other practical construction and conserving work than by book studies only.

Text-books and other books serve their best purpose by supplementing the information which the pupils are led to acquire by means of observation, discussion, examination and management of work by themselves. Such books should contain a good deal of matter which will inform the children on rural questions and interest them in rural conditions and progress. The content of the courses of practical work and study should be such as to provide for series of experiences which will piece on to those which the children have had, and which will prepare and qualify them to enjoy and to prefer work and life in the country.

It is important that the kind of ability developed should be suitable to the life to be lived; and that the habits formed should be such as will make for the largest measure of satisfaction and success in country life. Frequency of experience is what forms habits, and not repetitions of instructions or information. Habits are grown in quiet ways, like the shapes of trees and the budding and ripening of fruit; they become the destiny "which shapes our ends, rough-hew them how we will".

SOME OF THE PRINCIPLES AND METHODS RECOMMENDED IN ENGLAND.

The Board of Education of England sets forth some of the principles and methods of Rural Education in a Memorandum issued for official use in 1911. These are so appropriate and suggestive for Canada that the following extracts are presented.

"It is by small beginnings from within that most of the really successful rural schools have grown into making full use of the great wealth of material which country life affords for good teaching. Often enough when he commences the teacher is conscious that he is only partially master of what he sets out to do; but, by maintaining for himself the spirit of enquiry and by learning along with his children, his powers and his courage develop until he feels himself capable of launching out upon a completely new scheme. The necessaries for such a

beginning are but two, (i) a real interest in rural affairs, and (ii) willingness and sufficient courage to try experiments and to learn from others. Thus a teacher, starting with the keeping of poultry, finds in a short time that he must join up to it light woodwork and practical arithmetic, and this leads on to correlation with Drawing and English.

"The improvement of the rural schools as places of rural teaching is so intimately connected with the personal tastes and opportunities of individual teachers that those County Authorities have, upon the whole, been most successful which have refrained from planning in any detail the manner in which the teachers are to have recourse to country life for the material of their lessons. One County Authority, for example, has encouraged its rural teachers to take up, as part of their school work, any hobby in which they are interested; with the result that bee-keeping, poultry-rearing, practical land measurements, eradication of insects injurious to the farmer or gardener, such as the ox-warble fly, rose culture, carnation culture, simple cooking and other practical developments are included in the schemes of Nature Study for the various schools.

ENGLISH.

"Where the principle is adopted that the teaching should bear upon the life the child leads and the things he understands from daily experience, it may be, and often is, applied to all the lessons of the country school. Thus, in the course of their lessons in English the children are taught to describe common objects and typical sights and sounds, the changing seasons, the harvest, the wood-cutting, the farm-yard, the hunt. In the process of learning to describe they also learn to see and to appreciate. There is still room for improvement in the reading lessons. Simplicity and truth in the description of the lives and work of country men in this and other lands are to be sought, rather than the introduction of lectures under the guise of stories. Passages of prose and verse describing country scenes could be studied more than they are—there is no lack of material—and the children could be led to some appreciation of the great writers who have written of country life, realising from their daily experience the truth of the literature, and from their literature in turn the richness and beauty of the life.

ARITHMETIC

"In the Arithmetic taught in country schools there is a steady if not rapid improvement. It now includes actual measurements in and out of school; weighing and calculations involving the weights and measures commonly used in the district; the gathering of ideas about current prices from the local newspaper, the market and elsewhere, *e.g.*, the price of corn, butter, and eggs; the cost of farming operations such as ploughing, hay-making, hedging and draining; the wages of labourers; estimates of cost of transport and haulage, by post, road, canal, and rail; quick measurement by the eye and otherwise of distances, heights, and volumes—a wall, a tree, a church spire, a hayrick; the preparation

of statements, charts, and statistics, *e.g.*, on the temperature of the school, the gallons of milk per cow, and the number of eggs per score of fowls for different periods of the year; the cost of making articles such as troughs, pens, gates, doors, etc., and of erecting simple buildings like farm sheds and Dutch barns.

GEOGRAPHY

"No one who is acquainted with modern developments in the teaching of Geography will fail to see in it a powerful aid in the work of giving to the country child an intelligent and practical interest in his surroundings. It is based largely on the observations of local conditions, climate, prevailing winds, rainfall, lowlands and hills, rivers, soils, and it traces the effect of such conditions on vegetables, on animal life, and on the occupations and activities of mankind. It needs no stretch of imagination to conceive how teaching on these lines can give interest even to the most monotonous village life. There are as yet few schools which have developed their Geography teaching far in this direction, but enough has been done to justify confident hopes for the future.

HISTORY

"History is in much the same position, except that whereas every village will afford abundant illustrations of important principles in Geography it can hardly be said that every village has a known and interesting connection with History. Still, a great deal more could be done than often is done in the teaching of local History in village schools.

NATURE STUDY

"In some counties the attempt to pursue Nature Study is almost universal, and there is no reason to complain of a want of variety in the conceptions which prevail as to the scope and content of this topic. In the schools where the teaching is best the children are taught to make and keep daily records of temperature, sunshine, winds and rain, to note the seasonal appearances of birds, fruits, crops and flowers, to study the life history of plants and common insects, caterpillars, and grubs, kept in school, and to watch the stages of their growth and decay, and with the help of drawings and paintings to build up a valuable record of their own making in their note-books. Where there is no expert knowledge to draw upon, much less is attempted, and rightly; but even in the schools least fortunate in this respect simple observations and records are made.

"Much of the Nature Study can be combined with Geography, Practical Arithmetic, and Drawing. Thus the farm and the home, the countryside and the garden lead naturally to discussions, *e.g.*, on position, slope of the ground, soil, streams, wind and weather, and the vegetable and animal life of the district. The vegetation may be expressed in a series of crop maps; articles when measured may be drawn to scale; Geometry is needed if maps of the premises and the

district are to be prepared from observations; while drawing itself seeks to express the knowledge gained from direct contact with natural objects—twigs, buds, fruits and flowers, bulbs in various stages of growth, the life history of insects, common objects of daily use.

SCHOOL GARDENS

"The school gardens, in skilful hands, are the means of furnishing material for lessons in arithmetic and mensuration, descriptive composition and orderly records, book-keeping; and of quickening the interest and directing the attention of the scholars to the plants, flowers, trees and crops of garden and field; the influence of wind and weather; and the appearance and habits of birds and insects, especially those which are useful or harmful to the garden.

"In the Lindsey Division of Lincolnshire, where there are about 40 school gardens, a system of experimental schools has been instituted, which owes much to the initiative and enthusisam of Mr. Christopher Turnor, a member of the County Council. An extensive use is made of handicraft methods in these schools; and in a recent report upon them, H.M. Inspector notes four points: first, that it is quite clear that the new work has aroused the children's interest; second, that in the opinion of the teachers the manual work has had a beneficial effect upon the general work of the school; third, that children who are backward in the ordinary subjects are encouraged and brightened by the discovery that they can hold their own in manual exercises; and last, that a great deal of manual skill has been acquired by the pupils at these schools.

"In Staffordshire, where eight years ago there were 3 and now there are 171 School Gardens, the Director, amongst other interesting matter, reports that there is one very successful little school where the class is taught by a Headmistress. This County directs that all the children of a school, not only those who are in the Gardening Class, shall learn about their school garden by being taken to visit it under the supervision of a teacher.

BEE-KEEPING AND POULTRY

"In an increasing number of country schools bee-keeping and poultry management are being taught. They should not be merely demonstrations by the teacher. The children should take a share in all ordinary operations so that they may be enabled to put the teaching into practice in after-school life. Moreover, they should learn something about the varieties best suited to local conditions; to recognise the pests and diseases which attack their stock and how to deal with them; and also the best ways of preparing their products—wax and honey, fowls and eggs for the market."

A SCHOOL IN NORTHUMBERLAND.

Experience at many places indicates that increase of interest and benefit to the pupils follows when some of the school work, in such subjects as Arithmetic, Nature Study and Composition, is based upon the actual work done

on the farm or in the home during the week. With children of the age of 12 it seems highly important that the theoretical, explanatory and informational content of their school work should, in point of time as well as in character of interest, be as close as may be to their practical experience in the doing of things. An example of a Rural School where this plan was carried out with admirable results was found at the *Netherwitton Council School* in Northumberland, England.

The Headmaster, Mr. Peter J. Robertson, was most enthusiastic in the effort to make school a means of interesting children in rural life and of qualifying them to do well. The School Garden contained a plot for each of the older pupils. It was in excellent condition for educational purposes and also as an illustration of what might be done in gardening in the locality.

In connection with the Nature Study work, each of the older pupils chooses a tree in spring, then makes drawings and notes from time to time, showing its growth and the changes in appearance from spring to autumn and winter.

In connection with the regular work, the pupils bring specimens of poultry, etc. to the school for discussion. They also bring weekly a copy of market reports. Then work in Arithmetic is based upon the data obtained from these reports and from visits to farms in the neighborhood.

The teacher takes the older pupils to the farms frequently, and discusses with them the operations and conditions observed, the breeds of cattle, poultry, etc. The farmers are reported to welcome these visits, and occasionally one of them will accompany the children over the fields or through the buildings.

The spirit of the school, its setting and the appreciation expressed of it in the neighborhood, made it clear that it fulfils the true function of a Rural School, as indicated by the aim of the lessons on country life.

The following statements regarding the lessons on country life and extracts from the reports of H. M. Inspectors, were furnished by Mr. Robertson, who writes:—

"I have given a detailed account of farming lessons, as at present I am devoting most of the attention to them, with the object of trying to link the school and the farm."

Lessons on Country Life.

AIM OF LESSONS—

1. To teach children to love Nature, and
2. To take an intelligent interest in Rural Pursuits.

Lessons given:—

Cattle Farming.

Principal breeds:—Aberdeen Angus, Shorthorn, Irish, Galloway, Hereford. How to distinguish the above. Beef Producers, Milk Producers.

Kinds kept in this district:—Shorthorn and Irish. Why? A full description of these, and their management.

Information obtained from children by actual observation of above animals.

Arithmetic on above consists largely in working actual transactions in the local farmer's business. Local Market Prices are hung up in school every week.

Sheep Farming.

Principal Breeds:—Leicester, Cheviot, Black Face, Pure and Half Bred.
Kinds kept in this district:—Cheviot and Black Face.
Description and management of these.
Arithmetic similar to that on Cattle. Best wool producers and price of wool. Number of pounds in a Stone, fleeces in a Pack. Washing and shearing operations. Diseases of Sheep and Remedies.

Poultry Farming.

Chief Breeds:—Leghorn, Minorca, Buff Orpington, Wyandotte.
Best Cross Breeds.
Table Birds, Egg Producers.
Birds brought to school and examined by the children.
Care and feeding of chickens.
The success of these lessons has been largely due to the kindly help of the parents of the children.

Garden Work.

Lessons on common vegetables.
Crops weighed and measured.
Arithmetic. Areas measured. Land Surveying. Measuring of stone heaps and hay stacks, and finding value of same.

Trees.

Names of common trees of the district. Children supplied with note and sketch books. Each child takes a particular tree and visits it throughout the year, drawing sketches showing different stages in the growth of the tree.

Flowers.

Common wild flowers. Situation and date of bloom.
Grasses of the district.

Birds.

Migrants of the district. Date of coming and nesting places. Eggs *not* collected.
In lessons on birds, trees and flowers, the children tell orally, or write, what they have found out themselves, before the teacher gives the lesson.

English.

All subjects mentioned form suitable themes for Composition.
Every child brings an *Observation Paper* on Monday mornings.
Examples:—

a. Date of first straw in the building of a nest. Time taken to complete nest and hatch young.
b. Time various seeds take to germinate.

EXTRACTS FROM HIS MAJESTY'S INSPECTOR'S REPORTS.

"It would be hard to speak too highly of the enthusiasm and good sense which the Head Master throws into all his work.

"The attainments of the children are a testimony to the soundness of his methods, and he is to be particularly congratulated on the response which his scholars make to his efforts to interest them.

"An excellent feature of the school work, and one for which the children are well prepared by their good training, is the Nature Study. It is not at all bookish, though books are available for consultation, but consists of actual observation of animals and plants as well as of farming operations, in which the children take a lively interest."

The School Garden.

"Excellent all-round work is done here. Not only is the garden in perfect order, but it is made the means of giving concrete form to many of the school lessons. The actual experience of the boys in cropping their plots is made the base for calculations of quantities required for larger areas, both as regards seeds, manures, crops and profits.

"Practical Arithmetic is on sound lines, and the first principles of surveying have been taught with a view to practical field measuring next year."

THE SOMPTING SCHOOL IN SUSSEX.

The Commission visited a number of other Elementary Rural Schools in England and found evidence of much successful effort, particularly through Nature Study work, to direct the attention of the pupils to rural interests and to develop their ability in that direction. The case of the Sompting School in a quiet Sussex village, as described by Mr. Edmond Holmes, until recently Chief Inspector of Elementary Education for England, reveals so much that is suggestive and instructive for Canada that a brief description of some of its features is presented by means of extracts from his book "*What is and What Might be*"* and excerpts from a Paper read before an Education Club. Particular attention is directed to what is recorded on the subject of *Drawing*. That agrees with what the Commission learned, as being the judgment of the highest authorities with whom it had "Conversations", and with the practice in the best classes for Drawing, Design and Art which the Commission saw.

The extracts are as follows:—

PERCEPTION AND EXPRESSION.

Let us for a moment accept as valid a distinction which may easily become a snare and a delusion.

The perceptive faculties—those which enable us to grasp what is around us and draw it into ourselves and make it our own—seem to fall into two sub-groups. The first are the more

*Constable & Co., Ltd., (1911).

strictly mental faculties—those by means of which we see, observe, reflect, think, reason understand, know. The second are in greater or less degree emotional; and the emotions which tinge them may perhaps be grouped under the two comprehensive heads of sympathy and admiration (with their respective opposites).

The expressive faculties may be classified according to the channels through which they act. Of these there are four which the teacher is free to make use of. The first is *Language*. The second is *personal action*. The third is *handwork*. The fourth is *art*. Under the first head may be taught such subjects as composition (oral and written), reading aloud, recitation. Under the second head, such subjects as physical exercises, outdoor games, dancing, acting. Under the third, such subjects as carpentering, gardening, dressmaking, cooking. Under the fourth, such subjects as drawing, painting, modelling, music.

We have now to ask ourselves in what relation do the perceptive faculties stand to the expressive? Is it possible to devote this hour or half-hour to the training of perception, and that to the training of expression? Surely not. Perception and expression are not two faculties, but one. Each is the very counterpart and correlate, each is the very life and soul, of the other. Each, when divorced from the other, ceases to be its own true self. When perception is real, living, informed with personal feeling, it must needs find for itself the outlet of expression. When expression is real, living, informed with personal feeling, perception—the child's own perception of things—must needs be behind it. More than that. The perceptive faculties (at any rate in childhood) grow through the interpretation which expression gives them, and in no other way. And the expressive faculties grow by interpreting perception, and in no other way. The child who tries to draw what he sees is training his power of observation not less than his power of expression. As he passes and repasses between the object of his perception and his representation of it, there is a continuous gain both to his vision and to his technique. The more faithfully he tries to render his impression of his object, the more does that impression gain in truth and strength; and in proportion as the impression becomes truer and stronger, so does the rendering of it become more masterly and more correct.

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In the case of the child who tries to draw what he sees there is a continuous reciprocal action between perception and expression in virtue of which each in turn helps forward the evolution of the other. Even in so abstract and impersonal a subject as mathematics, the reaction of expression on perception is strong and salutary. The student who wishes to master a difficult piece of bookwork should try to write it out in his own words; in the effort to set it forth concisely and lucidly he will gradually perfect his apprehension of it. Were he to solve a difficult problem, he would probably regard his grasp of the solution as insecure and incomplete until he had succeeded in making it intelligible to another's mind. When perception is deeply tinged with emotion, as when one sees what is beautiful, or admires what is noble, the attempt to express it in language, action or art seems to be dictated by some inner necessity of one's nature. The meaning of this is that the perception itself imperatively demands expression in order that, in and through the struggle of the artistic consciousness to do full justice to it, it may gradually realize its hidden potentialities, discover its inner meaning, and find its true self.

ATTAINABLE IN ANY VILLAGE SCHOOL.

The ends which I am about to set before managers and teachers are ends which have been achieved, and are being achieved, *under entirely normal conditions*, in various parts of the country, and which are therefore not impracticable. There are many elementary schools in England in which bold and successful departures have been made from the beaten track; and in each of these cases what is at present a mere possibility for most schools has been actually realized. And there is one elementary school at least in which the beaten track has been entirely abandoned, with the result that possibilities (as I may now call them) which I might perhaps have dismissed on *a priori* grounds as too fantastic for serious consideration, have become part of the everyday life of the scholars.

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I will now try to describe a school in which one cannot spend five minutes without feeling that the prevailing atmosphere is entirely different from that of the ordinary elementary school, —that other ideals are in the ascendant, that other ends are aimed at, that other results are being achieved.

The school belongs to a quiet Sussex village called Sompting, which lies at the foot of the South Downs, about three miles inland from Worthing. It is attended by about 120 children. The head teacher, Miss Harriet Johnson, has had charge of this school for nine or ten years. Her staff is composed of her sister, who is uncertificated, and two 'supplementary' teachers. She herself has to take all the children above Standard II. There are some fifty of these in the main room, in two groups. The premises are quite mediocre, but there is a fairly large playground.

The first thing that strikes one on entering the school, is the bright and happy look on every face. The Sussex rustic is proverbially dull, but there is no sign of dullness on any face in this school.

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ACTIVITY AND HAPPINESS.

Two things will strike the stranger who pays his first visit to this school. One is the ceaseless activity of the children. The other is the bright and happy look on every face. In too many elementary schools the children are engaged either in laboriously doing nothing—in listening, for example, with ill-concealed yawns, to *lectures* on history, geography, nature-study, and the rest; or in doing what is only one degree removed from nothing,—working mechanical sums, transcribing lists of spellings or pieces of composition, drawing diagrams which have no meaning for them, and so forth. But in this school every child is, as a rule, actively employed. And bearing in mind that "unimpeded energy" is a recognized source of happiness, the visitor will probably conjecture that there is a close connection between the activity of the children and the brightness of their faces.

There is no trace in this school of the mental lethargy, which, in spite of the ceaseless activity of the teachers, pervades the atmosphere of so many elementary schools; no trace of the fatal inertness on the part of the child, which is the outcome of five or six years of systematic repression and compulsory inaction. The air of the school is electrical with energy. We are obviously in the presence of an active and vigorous life.

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SELF-EXPRESSION.

The third thing that strikes the visitor is that the various activities that are in progress are all forms of self-expression. The child himself is behind everything that he does; and he is nearly always doing something. The number of channels of self-expression which have been opened up for the children in this school is remarkable. Here are some of them:—

(1) *Talking*, including the free expression of opinions and experiences, the free asking of questions, formal debating, the making up of dialogues, etc.
(2) *Written composition* of various kinds, including the making of notes by the children for their own use, descriptions of nature, the making up of stories, verses, etc.
(3) *Reading* aloud (by individual children to the rest of the class).
(4) *Recitation* of poetry.
(5) *Singing*, including the old English Folk Songs, which are partly dramatic.
(6) *Morris dancing*, which is also partly dramatic.
(7) *Dancing*, in the ordinary sense of the word.
(8) *Acting*, including the dramatic treatment of history, geography and even arithmetic, the dramatic interpretation of Shakespeare's dialogues, scenes from Dickens, etc.
(9) *Drawing* with pencil, brush and chalk.
(10) *Clay modelling.*
(11) *Informal gardening*, including observations of plant life.
(12) *Informal carpentering*, including the making of useful things, such as sheds and fences.
(13) *Informal cookery.*
(14) *Cutting out and making garments*, including the making of simple fancy costumes for the girls themselves, and armour (made of tea-paper) and other historical costumes for the boys.

Behind all these various modes of expression stands, as I have said, the child himself. The expression is always self-expression. There is no fraud about it, no hypocrisy, no cant. Miss Johnson's one idea is to help the children to educate themselves. She gives them the three things which every teacher ought to give his pupils—material, stimulus, guidance. The rest they must do for themselves. Whether she has thought out the great problem which she has solved so successfully, or whether, by the exercise of that faculty of divination with which her sex is more richly endowed than ours, she has felt her way to the true solution of it, I cannot say. But the fact remains that the whole of her work is based on the fundamental assumption that real education is self-education, and that for self-education we need, first and foremost, self-expression. In everything that she does, in everything that the children do, she gives proof of her deep-seated conviction that growth comes from within the soul, and cannot be imposed upon it from without; that the soul grows in and through the growth of its perceptive faculties; that the perceptive faculties grow by expressing themselves ; and therefore—as the conclusion of the whole matter—that to foster self-expression is the first and last duty of the teacher.

HISTORY.

Let us now consider in detail how some of the subjects are taught. The treatment of *History* is in the main dramatic. When they come to an episode which lends itself to dramatic

treatment, the older children proceed to dramatise it. With this end in view, they consult some advanced historical manual, or some historical novel, and having studied with care the particular chapter in which they are interested, they proceed to make up their own dialogues, and their own costumes and other accessories. They then act the scene, putting their own interpretation on the various parts, and receiving, as usual, the stimulus and guidance of Miss Johnson's sympathetic and helpful criticism. The rest of the class (or rather all the children in the main room) look on, with the history books open in front of them, and applaud; and, by gradually familiarising themselves with the parts, qualify themselves half-unconsciously to act as understudies in the particular scene, and in due course to play their own parts as interpreters of some other historical episode. I know of no treatment of history which is so effective as this for young children. The actual knowledge of the facts of history which a child carries away with him from an elementary school is as rule nil (for he has been spending his time listening to dull lectures which went in at one ear and out at the other), and is, in any case, a negligible quantity. But the child who has once acted history will always be interested in it, and being interested in it, will be able, without making a formal study of it, to absorb its spirit, its atmosphere, and the more significant of its facts. But the advantages of the dramatic treatment of history do not end with the subject itself. The actors in these historical scenes are expressing their own interpretation of the various parts, and their own perception of the meaning of each episode as a whole. This means that they are training, *inter alia*, two sovereign faculties—imagination and sympathy—and training them, as I can testify, with striking success; for the dramatic power which they display is remarkable, and can have been generated by nothing less than sympathetic insight into the feelings of the various historical personages and the possibilities of the various situations.

NATURE STUDY.

Nature-study has always been a prominent feature in the work of this school. Whenever a lesson is given on a given subject, *e.g.* on a holly leaf, every child has a specimen and a lens. They observe the characteristics of the object closely and carefully, in order to discover facts which might escape the unobservant. Having discovered these, they try to account for them. In these attempts they display much ingenuity and intelligence, and are led on by Miss Johnson in the direction of the true explanation of each phenomenon, and the relation of this to what they know of the object as a whole, and of its meaning and function. In the questions which the children ask, and in their own tentative answers to them, they express their perception of the features and properties of the object which has been placed before them. The faculty of observation grows with the attempts that are made to interpret its data (for some obscure fact, as yet unnoticed, may throw light on the meaning of one which has already been observed); and as it grows it makes a further demand on the ingenuity and intelligence of the child who exercises it. The nature ramble, in which the children make notes and sketches of what they see, is another aspect of nature study. The experimental study of plant life in the garden is a third. The drawing of beautiful natural objects is a fourth. The search for appropriate poetical questions is a fifth. The training which the child is receiving in nature-study, when it is so treated, is something more than mental. His more emotional qualities—his sympathy with other forms of life than his own, his subtle insight into, and feeling for, the general life of nature, his admiration of what is beautiful—are allowed, and therefore encouraged, to exercise themselves; and their consequent growth carries with it the general expansion of the inner life of the child.

DRAWING.

This leads me to speak of a subject in the treatment of which the advantages and possibilities of self-education are aptly and forcibly illustrated—*Drawing*. The production of outward and visible results is the last thing that Miss Johnson thinks of; and she is right to ignore it, for the only results of education that really matter are the kind and the degree of mental growth that the child has made. But whenever the production of what we call results happens to be compatible with true progress, Miss Johnson's very indifference to 'show' work makes her conspicuously successful in producing it. Now it happens that drawing is one of the subjects in which what is outward and visible, when judged by a really competent critic, gives a fairly correct idea of the inward and spiritual state of the child. And it also happens that the drawing of this school—the actual work done by the children—has been judged by one who, being in equal degrees an artist and an educationist, is unquestionably a 'really competent critic'. Of the four women who teach in this school, three cannot draw a line, and the fourth, Miss Johnson herself, is easily beaten at drawing by the more forward of her pupils. It is clear, then, that in this subject, at any rate, these children have been compelled by the force of circumstances to educate themselves. That being so, it is interesting to hear what our critic has to say about their drawings, Here is his report:—

"In this school the teaching of Drawing reaches the highest educational level I have hitherto met with in our elementary schools, and the results are the genuine expression of the children's own thoughts. Flat copies are not used, and the scholars evolve their own technique, for the head teacher, Miss Johnson, is not strong herself in this respect. The development of thought carries with it the development of skill, and this is clearly seen in the children's drawings, which

show good form and proportion, some knowledge of light and shade, a delicate and refined perception of colour, and a wonderful power of dealing with the difficulties of foreshortening. The central law is *self-effort*—confidence and self-reliance follow. The spontaneous activities of the children are duly recognized, and the latter decide what to draw, how to draw it, and the materials to be used. One cannot remain in the school long without observing the absence of that timidity, that haunting fear of making a mistake, which paralyses the minds and bodies of so many of our children. Under Miss Johnson's influence the children become acute critics. Her methods coincide so exactly with those which I have long been advocating, that I give them in her own words:—

I gave each child an ivy leaf, and said, 'Now look well at it'. We talked about its peculiarities, looking all the time, and then I told them to draw one, still looking back to the leaf from time to time. Then I examined results. A good many were, of course, faulty. In those cases I did not say, 'No, you are wrong, this is the way', and go to the black board. I said, 'In such and such a part is yours the same as the leaf ? 'What is different? How can you alter it?', etc., etc. I make *them tell me their faults*. There was no black board demonstration".

THE PATH OF TRUE PROGRESS.

From a careful examination of their work it is clear that the children have not only been taught to draw, but that they love and enjoy their drawing. Form and colour are not only seen, but understood and felt. The children are impelled by an irresistible desire to reach and express the truth, and are thus carried along an ever-moving path of educative action. I am told that scholars may sometimes be seen seated on a bank in the lanes depicting some object which has attracted their attention and excited their admiration.

Could we have stronger proof than this that the path of self-education is the path of true progress?

So much for the mental training of the children. But, after all, the soul of man is not divisible into water-tight compartments; and the mental training of the child must needs affect, for good or for evil, the whole range as well as the whole course of his development. There was a time when every elementary school received a large grant for instruction and a small grant for discipline, and Inspectors were supposed to report separately on each of these aspects of the school's life. A strange misconception of the meaning and purpose of education underlay this artificial distinction; but on that we need not dwell. Were I called upon to report on the discipline of this school, my report would be brief. There is no discipline in this school. There is no need for any. Apart from his love of his teacher and his pride in his school, each child in turn is so happy in his work that the idea of being naughty never enters his head. Those energies which, when kept in a state of forced inaction, or otherwise subjected to undue constraint, break out into various forms of naughtiness, are so fully and so happily occupied that the safety-valve of misconduct has never to be used. It is patent to the most careless observer that in the atmosphere of this school—

"Love is an unerring light
And joy its own security."

"A WAY TO UNITE SCHOOL AND HOME."

It seems desirable that part of the work carried on by the pupils on the farms and in the homes after they are 12 years of age should be recognized as an integral part of the school course. At various places in Canada the Commission learned of individual teachers who gave credit, on the record of school progress, for home work outside the range of school studies. A recent publication by Mr. L. R. Alderman, State Superintendent of Public Instruction for Oregon, has come under the notice of the Commission. It contains information, of a similar character to that which has come to the knowledge of the Commission in fragmentary ways, in such a lucid and complete form that the following extracts from Mr. Alderman's pamphlet on "A Way to Unite School and Home" are presented. It will be observed that in the article by Mr. Alderman the experiences at the Spring Valley School and at the Ontario School are cited, together with extracts from a communication made by Mr. T. J. Garing, Superintendent of Education for the County of Clackamas, Oregon.

HOW IT CAME ABOUT.

The idea of giving school credit for home work first occurred to me nine years ago when I was a school principal. I had noticed that one of my rosiest-cheeked, most vigorous appearing girls spent much time on the streets after school. One day Mary's mother was pointed out to me. She was a pale, nervous little woman with several children. Knowing that the family was not very well to do I felt myself burning with indignation at the circumstances that were drawing Mary away from interest in her home. I thought, "What is the use of my teaching that girl algebra and general history, when what she most needs to be taught is that her mother is her best friend and needs her help?"

At the algebra recitation the next day I announced that the lesson for the following day would consist of ten problems as usual, but that five would be from the book, and five not from the book. The five not from the book would consist for the girls of helping cook supper, helping to do up the kitchen work after supper, preparing breakfast, helping with the dishes and kitchen work after breakfast, and putting a bedroom in order. When I asked for "hands up" on all the problems the following day, I noticed that Mary kept her hand raised after the others were down. "What is it?" I asked. "I worked five in advance," she replied with sparkling eyes, "I worked five ahead in the book, besides the ten that you gave us." From that time Mary's interest in all school work was doubled. She was right up in the first rank. The rest of the year we regularly talked over the girls' home work. School public opinion encouraged the girls so that more and more reported on what they had done in house-work and sewing, and felt proud of it. Best of all, our discussions brought the school and the home together. The year was successful for all of us. More parents visited the school, and there was a concerted movement for the betterment of school conditions.

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UNPROFESSIONAL TEACHERS.

The plan I have in mind will cost no money, will take but little school time, and can be put into operation in every part of the State at once. It will create a demand for expert instruction later on. It is to give school credit for industrial work done at home. The mother and father are to be recognized as teachers, and the school teacher put into the position of one who cares about the habits and tastes of the whole child. Then the teacher and the parents will have much in common. Every home has the equipment for industrial work and has someone who uses it with more or less skill.

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The school has made so many demands on the home that the parents have in some cases felt that all the time of the child must be given to the school. But an important thing that the child needs along with school work is established habits of home making. What one does depends as much upon habit as upon knowledge. The criticism that is most often made upon industrial work at school is that it is so different from the work done at the home that it does not put the child into that sympathetic relation with the home, which after all is for him and the home the most important thing in the world.

But one says: "How can it be brought about? How can the school give credit for industrial work done at home?" This may be accomplished by printed slips asking the home to take account of the work that the child does at home under the instruction of the home, and explaining that credit will be given this work on the school record. These slips must be prepared for children according to age so that the child will not be asked to do too much, for it must be clearly recognized that children must have time for real play. The required tasks must not be too arduous, yet they must be real tasks. They must not be tasks that will put extra work on parents except in the matter of instruction and observation. They may well call for the care of animals, and should include garden work for both boys and girls. Credit in school for home industrial work (with the parents' consent) should count as much as any one study in school.

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SPRING VALLEY SCHOOL.

A. I. O'Reilly, a young man who is just completing his third year at the Spring Valley School a country district in Polk County, determined last September (1911) to test the plan of giving credit to his pupils for the work they did at home. He went to his directors, and secured their promise to give money from the general school funds to be awarded to the pupils earning the most credit in a home-work contest. He then proceeded to work out his plans, the contest idea in bringing about the results being original with him.

The duties for which home credit is offered on Mr. O'Reilly's credit schedule are these: Building fire in the morning, 5 minutes; milking a cow, 5 minutes; cleaning out the barn, 10 minutes; splitting and carrying in wood (12 hours' supply), 10 minutes; turning cream separator, 10 minutes; cleaning horse (each horse), 10 minutes; gathering eggs, 10 minutes; feeding chickens 5 minutes; feeding pigs, 5 minutes; feeding horse, 5 minutes; feeding cows, 5 minutes; churning

butter, 10 minutes; making butter, 10 minutes; blacking stove, 5 minutes; making and baking bread, 1 hour; making biscuits, 10 minutes; preparing the breakfast for family, 30 minutes; preparing supper for family, 30 minutes; washing and wiping dishes (one meal), 15 minutes; sweeping floor, 5 minutes; dusting furniture (rugs, etc., one room), 5 minutes; scrubbing floor, 20 minutes; making beds (must be made after school), each bed 5 minutes; washing, ironing and starching own clothes that are worn at school (each week), 2 hours; bathing (each bath), 30 minutes; arriving at school with clean hands, face, teeth, and nails, and with hair combed, 10 minutes; practising music lesson (for 30 minutes), 10 minutes; retiring on or before 9 o'clock, 5 minutes; bathing and dressing baby, 10 minutes; sleeping with window boards in bedroom (each night), 5 minutes; other work not listed, reasonable credit.

All of Mr. O'Reilly's pupils, thirty-one in number, entered the contest with the vim and eagerness for which children are noted, and have faithfully kept up their home work throughout the year. The parents have co-operated by sending in the lists of work done by the children at home. Every morning Mr. O'Reilly receives these notes, which are usually written by the children and signed by the parents. Here are a few samples of parents' reports:—

Flora Mortensen,

April 17, 1912—	*Min.*
Fed the chickens	5
Gathered the eggs	15
Set the table	5
Wiped the dishes	5
Tended flowers	20
Swept one floor	5
Was in bed before 9	5
Washed my teeth	10
Prepared one lunch	5
Total	75

Henry Davidson,

April 17, 1912—	*Min.*
Milked cows	20
Curried horses	10
Hunted eggs	10
Fed chickens	10
Fed pigs	10
Fed horses	10
Fed cows	10
Cut wood	10
To bed before 9	5
Total	95

La Verne Holdridge.

April 16, 1912—	*Min.*
Fed chickens	5
Gathered eggs	15
Split kindling	10
Carried in wood	15
Swept four floors	20
Fed one horse	5
Dried dishes	15
In bed before 9	5
Total	90

Evangeline Jennings,

April 16, 1912—	*Min.*
Prepared supper	30
Washed and dried dishes	15
Gathered eggs	15
Fed the chickens	5
Put separator together	10
Turned separator	10
Made one bed	5
Cleaned my teeth	10
Retired before 9	5
Total	105

Not only the girls and boys of 10, 12 and 14 years of age are interested in the contest, but the smaller children have gone into the contest with a great deal of zeal.

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EXAMINED BY COUNTY SCHOOL SUPERINTENDENTS.

What was being done in the little school in Spring Valley was soon talked of. Early in December, 1911, the Portland papers discussed the novel experiment. Early in January, 1912 the county school superintendents from all over the State assembled at Salem, as is the custom twice each year, to grade examination papers. Superintendent H. C. Seymour of Polk County invited all the superintendents to visit the Spring Valley school, and provided carriages for the eight-mile drive. Excerpts from a first-hand impression of this day's visit written for the Oregon City paper by County Superintendent T. J. Gary of Clackamas County.

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"These things were all of interest to us, but the one thing we were most curious to know about was the system the teacher had of giving credits for home work, not school work done at home, but all kinds of honest work a country girl or boy can find to do. Pupils were given five minutes for milking a cow, five minutes for lighting a fire, five minutes for sleeping in fresh air, five minutes for taking a bath, and so on through the long list of common duties incident to home life and country. The rule of the school is that any pupil who has earned 600 minutes may have a holiday, at the discretion of the teacher. If the pupil asks for a holiday to use for some worthy cause the teacher grants it providing it will not interfere too much with his school work. It is further provided that no pupil may have more than one holiday in 20 days.

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TESTIMONY OF PARENTS.

"The chairman called upon the parents to give their testimony as to the success of the movement. I cannot write here all that was said, but will give two as fair samples of all.

One good motherly looking country woman said: 'Before this plan was started I got up in the morning and prepared breakfast for the family and after breakfast gave time to the preparation of the children for school. Now, when morning comes the girls insist upon my lying in bed so that they may get breakfast. After breakfast they wash the dishes, sweep the kitchen, and do many other things as well as make their own preparation for school. I think the plan is a success. My only fear is that it will make me lazy.'

"One father said: 'I have two boys—one in the high school and Jack, here. It was as hard work to get the older boy out in the morning as it was to do the chores, and as Jack was too young to be compelled to do the work, I let them both sleep while I did it. Now, when the alarm sounds, I hear Jack tumbling out of bed and when I get up I find the fires burning and the stock at the barn cared for, so all I have to do is to look happy, eat my breakfast, and go about my business. Yes, it is a great success in our home.'

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"It is the universal testimony of the parents in this district that the children are co-operating with them, and becoming interested in their home as never before. One mother said that it seemed that her duties were reduced by half, and that the children were eager to do more, for more work meant more school credit."

TESTIMONY OF THE TEACHER.

To the question, "Does this work interfere with the work of the school?" the teacher said, "No, I find that the children have taken more interest in their school work and are making more progress than before."

"This contest plan ought to be contagious," continued the teacher, "for it is the best thing I have ever tried in the way of getting the children completely in sympathy with both school and home duties. It is not my intention to give full credit for time necessarily spent in home duties. I have explained to the children that it is best to go out into the world expecting, if necessary, to give more than they get."

"The plan is an agreement between the pupil and myself. If he fails to live up to his part of it he learns that his failure works a real hardship upon him. Perhaps I am teaching some practical law here. The plan of awards has started them on a commercial future and has resulted in my having to tell them all about savings accounts. The plan is going without a hitch."

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THE ONTARIO SCHOOL.

Other schools of the State are now becoming deeply interested in the new educational field. There is not much doubt that next fall it will be introduced into a great number of schools. E. B. Conklin, city superintendent of Ontario, and W. W. Wiley, city superintendent of Athena, have gotten out printed home-work cards. Mr. Conklin's card leaves space opposite each home duty for the grade obtained for the months beginning with February of this year till the close of the term. The regular school marks are offered: F, fair; P, poor; G, good; and E, excellent. These cards are sent home with the regular monthly report card. The parent is to grade and sign the card, returning it to the teacher. The duties on the card are: Sewing and mending, bread making, general cooking, setting and serving table, washing and wiping dishes, washing and ironing, sweeping and making beds, mopping and care of kitchen, care of younger children, making fires, getting water, coal, kindling, etc., feeding stock or poultry, milking cows, barn or yard work, garden or field work, errands. This card also takes into consideration the character development of the child, and names the following to be graded by the parent: Cheerfulness, kindness, order and care of clothes, cleanliness, bathing, table manners, politeness, keeping temper, doing before told, care of language at home, off street, courtesy to parents, kindness to animals, care of playthings, home study, ambition to succeed.

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MR. ALDERMAN'S OPINION.

On a recent visit to Ontario I was much gratified to find that Mr. Conklin's plan was working out with great success. I asked no questions concerning it at first, but before I had been in the city long a number of parents came to me with enthusiastic expressions of approval of the manner in which the plan was engaging the attention of the children, and was serving as an incentive to interest them in the duties of their home.

In my opinion the giving of school credit for home work is like opening great reservoirs of power which as yet have scarcely been tapped.

AGRICULTURE IN THE SCHOOLS OF ONTARIO.

Attempts have been made for more than 60 years to include instruction in Agriculture in the curriculum of the schools. Until the combination arrived of the School Garden, systematized Nature Study and the Trained Teacher, but little progress was made. The wide range of the agencies at work for promoting the teaching of Agriculture in the schools is set forth in a publication issued by the Department of Education, Circular No. 3, August 1912, as follows:—

In 1903. The Macdonald Institute was established at the Ontario Agricultural College, having as one of its purposes the special training of teachers in Agriculture. At this time five so-called Macdonald School Gardens were commenced in Carleton County.

In 1904. The first *Summer School for Teachers* was held at Macdonald Institute, and in the fall term the first Interprovincial Teachers' Class was held under the Macdonald Scholarship scheme.

At this date another important step was taken in the direction of Agricultural education by the incorporation of the subject of *Nature Study* into the Public School Course of Study.

At the same time, the work in Elementary Science for the first two years in the High Schools was re-arranged, giving the affairs of Agriculture—though not using the name—considerable prominence.

In 1907. The Government made special grants available to schools and teachers for carrying on school gardening; arrangements were made also for granting certificates in Agriculture to teachers.

In 1909. The first Normal Teachers' Class in Elementary Agriculture and Horticulture was held at the Ontario Agricultural College.

In 1910. Fifteen schools qualified for grants for school gardening.

In 1911. Thirty-three schools qualified for grants for school gardens. A Director of Elementary Agricultural Education was appointed to oversee and promote the work.

In 1912. Regulations made the "teaching of Agriculture" the basis for special grants, in place of the school-garden merely, and over one hundred schools signified their intention of *teaching agriculture;* this means that practical work is to be carried on in gardens, and systematic instruction given in the school.

At the Present Time.

In the public schools. The subject of Nature Study, introduced in 1904, is becoming better understood year by year, and gradually taking its place in the schools. This subject is essentially agricultural; for its materials, it uses the natural objects or phenomena that concern the farmer—soils, weather, plants and animals. The rural school-teacher, in leading her pupils to grow plants, to care for animals, and to observe the phenomena of their environment, is teaching *Elementary Agriculture.*

Besides this general work, carried on under the name of Nature Study, several hundred schools are this year giving special attention to agriculture in school gardens, home gardens, corn clubs or poultry clubs. This phase of the work is apparently growing rapidly. Where, in 1910, 15 schools qualified for the special grants given for School Gardens, in 1911 there were 33, and this year over 100 schools have signified their intention of teaching agriculture through practical work in gardening.

There is no special text-book prescribed in Agriculture, but schools are encouraged to provide agricultural books and papers for their libraries. The best lessons will be learned by observation and experiment, but the use of books for reference is encouraged.

In the high schools. Perhaps it is not generally known that a considerable amount of agriculture is taught in all our 284 High and Continuation Schools. But the so-called Elementary Science taken in the two first years by all pupils has a decided agricultural bias, and includes such topics as economic insects, farm animals, plant diseases, plant propagation, and weed-seed impurities. Moreover, liberal options are allowed, so that teachers may substitute for some of the out-door work special agricultural topics, such as poultry, bee-keeping, live stock, dairying, soils, and experiments in grain-growing, fertilizers, etc.; it is possible for any High or Continuation School catering to rural communities to arrange to have this work carried out; our science teachers are adapting themselves to the work very well.

In the normal schools. In the Nature Study and Science work taken up with the teachers-in-training at the Normal Schools, emphasis is laid on agricultural studies suitable for rural schools. School Garden work is carried on also.

A special year's course to supplement the High School Agriculture is to be arranged for also; teachers who have taken Agriculture in the High and Normal Schools will be eligible for a certificate in Elementary Agriculture then on completing one summer session at the Agricultural College.

At the Ontario Agricultural College. The work of teacher-training in Agriculture has been carried on at the O.A.C. since 1904. Special Courses of Instruction are given in spring and summer terms. The teachers taking the Spring Course come for ten weeks from the Normal Schools after their graduation at Easter. In the summer holidays, five weeks' courses are held for teachers engaged in teaching during the regular school term; in two summer terms, the work of the ten weeks' spring term is covered. In both cases certificates in *Elementary Agriculture and Horticulture* are awarded successful students. In the instruction given to teachers by the College, the boys and girls in the country schools are kept in view always.

More than 800 teachers have received instruction during the past nine years.

The District Agricultural Representatives are all trained at the Agricultural College also.

In conjunction with the universities arrangements have been recently made for another branch of teacher-training to be carried out by the Agricultural College. This is to be in conjunction with Toronto, McMaster and Queen's Universities. By the arrangement students taking the first two years in Science at the Universities will be permitted to take their last two years in Agricultural Science at Guelph. This course will lead to the degree B.Sc. (Agr.) and qualify for specialist standing in Science. Science masters so trained will be able to introduce agriculture into our rural High Schools and to carry out experiments of local interest.

The dominion government. From the special appropriation made to the Province of Ontario for the promotion of agriculture at the last session of the Dominion Parliament, $10,000 was set aside for the encouragement of the teaching of Agriculture in the Public Schools.

District agricultural representatives. At the present time there are thirty graduates of the Agricultural College established in as many counties. Amongst the many duties they have found for themselves as agricultural propagandists, many of them have co-operated with the schools in teaching agriculture through the distribution of seed for home gardening, through the organization of corn clubs, children's fairs, etc.

In the High Schools, many of them conduct four or six weeks' short courses for farmers' sons during the winter months. At some centres, the Representatives have taken the Agriculture part of the Elementary Science course throughout the year with the first year pupils in the High Schools.

THE SCHOOLS' DIVISION OF THE EXPERIMENTAL UNION. This branch of The Experimental Union was established in 1909 to assist the schools in carrying out practical studies in agriculture. It distributes agricultural books and bulletins, flower and vegetable seeds, grain, bulbs, shrubs, vines and forest tree seedlings. It issues instruction sheets to teachers and circulars for the pupils. This year (1912) it has furnished material to 218 schools.

THE DIRECTOR OF ELEMENTARY AGRICULTURAL EDUCATION. The duty of this officer is to help teachers, trustees and inspectors to carry on the work in the best possible way. Under his direction schools are supplied with charts, circulars and bulletins. The teacher-training at the Agricultural College is under his supervision as well as the work of the Schools' Division of the Experimental Union.

The director of Elementary Agricultural Education has his headquarters at the Ontario Agricultural College, Guelph, Ont. From time to time excellent circulars regarding School Gardens and pupils' work in them are published by the Department of Education in co-operation with the Department of Agriculture and the Schools' Division of the Ontario Experimental Union.

THE ONTARIO AGRICULTURAL AND EXPERIMENTAL UNION.

The Experimental Union, as it is usually called, was formed in 1879 for the purpose of encouraging the scientific study of farm crops and farm operations amongst the students of the Ontario Agricultural College.

While actual membership has been restricted to students, ex-students and teachers of the College, it offers every one the opportunity of taking part in its co-operative experiments. Up to the end of 1911 over 70,000 experiments were carried on by members and associates in the Province of Ontario in different lines of work relating to Agriculture, Farm Crops, Fertilizers, Poultry, Fruits, Vegetables, and Forestry. This has helped very much in advancing the chief industry of the Province.

A *Schools' Division* of this Union was organized in 1909. It aims to adapt the work of the Union to the needs of the schools, giving to our boys and girls a training in careful work and observation, so that when they are older they may take up some of the larger experiments or solve for themselves the problems that will arise in their daily work.

"To be a good member of the Union implies:—

1. That you will learn to look forward and plan your work.
2. That you will follow instructions carefully.
3. That you will do your work well and not neglect it.
4. That you will observe closely what is happening to the plants in your garden; that every day you will learn a little more and become a little wiser and a little more patient.
5. That you will grow the very best flowers and the very best vegetables that can be grown in your garden, and the very best grain in your experimental plots, and that you will not be satisfied with anything but the best.
6. That you will be interested in your schoolmate's efforts; ready to help him and ready to acknowledge his helpfulness to you.

CIRCULARS AS TO SCHOOL GARDENS.

The circulars of the Department are appropriately illustrated. One deals with the general subject of Childrens' Gardening under such headings as:—

How to keep your Garden Journal;
Garden Tools and their Care;
What to grow and how to procure seed;
Locating and laying out a garden at home;
Preparation of the soil;
Planning the plot and planting the seed;
Protecting seedlings;
Mulching, Watering and Cultivating;
Thinning and Transplanting;
Picking flowers;
Gathering seed; growing bulbs;
Garden Rubbish, etc.

Circulars are also issued giving detailed information on the work of a school experiment, with a particular plant or crop. Under the subsidiary *Cultural Directions* useful suggestions and directions are offered in regard to:—Time of Planting; Soil and Manuring; Sowing; Cultivating; Weeding; Thinning; Harvesting; Storing; Estimate of Yield; Using; Reporting.

Other circulars contain the requisite information on the carrying on of simple experiments with cereals and are accompanied by charts which illustrate some of the experimental work at the Agricultural College. Another chart with its supplemental circular contains just the information boys and girls in rural districts should have on Alfalfa or Lucerne, with the offer of seed to sow a small plot and directions how to care for the crop.

THE CONSOLIDATION OF RURAL SCHOOLS.

A brief statement regarding this matter was presented in Chapter III, page 156. Some further particulars of interest are contained in the following extracts taken from a *Schools' and Teachers' Bulletin* issued from the Ontario Agricultural College in February 1911.

In a recent bulletin published by the United States Department of Agriculture "Consolidated Rural Schools and Organization of a County System," by Geo. W. Knorr, Esq., one learns that in 32 States, there are about 1,800 typical and graded consolidated schools, i.e. schools giving instruction in High School subjects, and 2,000 other consolidations which cover the work of the Public School courses only. The large growth of the movement in recent years points to a new order of things in the American Rural School System.

A brief survey of the status of consolidation in Canada may be of hopeful interest to those who look for great good from it as well as to those who may have considered it an impracticable and unsuccessful experiment.

THE CONSOLIDATION OF SCHOOLS IN CANADA.

In the Macdonald-Robertson scheme for the improvement of Canadian Rural Schools, Consolidated Schools, after the type of some of those organized in Ohio and Indiana, were established in each of the five eastern provinces with the exception of Quebec. After six years'

experience with these schools it must be acknowledged, that while the principle of consolidation has been confirmed in undoubted pedagogical successes, these two educational reformers have been in advance of their times. None of these provinces was ready to incorporate into its body educational the highly organized Rural Graded School that had met with a large and favourable acceptance in another country. All the schools continue in operation, but on a reduced scale. The times were not ready for such large Rural Schools or for such extensive additions of vocational subjects.

The explanation is not far to seek. There was no keenly-felt need for reform. The condition of the schools was not felt to be so bad as to require any large change in organization. In school matters, the disposition is to conservatism. People were getting for their children as good an education as they wanted for them. They had always had the one-teacher, ungraded Rural School; it was still giving satisfactory account of itself. They were still giving the children a sufficient grounding in reading, writing and arithmetic; other things were not considered requisite. So there was not a sufficient force of enlightened public sentiment generated with the introduction of the reform to sustain and expand it. There was perhaps need for more missionary work preliminary to the establishment of the schools that were to serve as object lessons. Some of the criticism should have exhausted itself though propaganda and discussion.

The small should have preceded the large. It is now known that it would have been better to have commenced the schools on a smaller scale, taking in fewer school districts. Although it would have prevented, possibly, the most satisfactory introduction of Domestic Science and Manual Training teaching, it would have greatly lessened the costliness of the experiment and saved the hardest criticism of it—the increased expense.

ONTARIO.

The Macdonald Consolidated School, at Guelph, commenced in 1904 with five schools joined. At the present time two districts comprise the consolidation with about forty additional pupils from the surrounding districts in attendance. That the school has won the approval of parents is evidenced in the fact that at the close of the three-year trial period, when the vote to decide whether or not to continue in consolidation, was taken, only one ratepayer, with children at school, in the three retiring districts voted for withdrawal. In every case there was only a small majority against continuing even with the necessity for increased taxation before the ratepayers.

The special education which the school was established to exemplify still continues. The pupils receive special instruction in Manual Training, Domestic Science and Elementary Agriculture. With the approval of the Department of Education the continuation classes have adapted their studies this year to specially fit the needs of the home and the farm, breaking away from the more literary studies prescribed in our High School courses. The work of the school has the hearty endorsation of parents, inspectors and visitors.

PRINCE EDWARD ISLAND.

The case for and against consolidation is very concisely and admirably set forth in the Report of a Special Commission on Education which investigated the matter in 1909, as follows:—

The benefits to be derived from the principle of centralization or consolidation, experience has shown to be:—

(*a*) *Increase in the number of pupils in a school, giving them contact with larger numbers and so widening their experience and developing them socially, which is one of the chief functions of the school;*

(*b*) *Increase in the number of pupils, rendering a close classification possible, and so forming classes the members of which can advance as a unit;*

(*c*) *Better work, inasmuch as class work is more beneficial than work with the individual pupil as in the small school;*

(*d*) *Greater progress in work, resulting from the companionship and emulation of the class members, and from the fact that the class is longer in contact with the teacher in the recitations, by reason of the smaller number of classes in the graded school;*

(*e*) *Increased percentage in average daily attendance as a result of the increase of life, interest and activity in the school;*

(*f*) *Better school buildings and school equipment, possible by reason of the greater property valuation of the district; and so, a greater public interest in the school: "Make the school worth seeing and the people will come to see it."*

(*g*) *Better inspection and supervision, as the inspector's time is not wastefully occupied in inspecting a large number of small schools. For rural schools full and frequent inspection is of paramount importance;*

(*h*) *Enlarged opportunity for doing work in new branches that are practically impossible in the small school with the poor equipment; e. g., music, drawing, manual training, household science, school-gardening.*

The chief arguments against centralization are:—

(*a*) *Closing of Schools. The loss to the district of the school that has been closed;*

(*b*) *Distance. The difficulties and exposure in the work of transportation;*

(*c*) *Cost. The increased cost chiefly attributable to transportation;*

(*d*) *Depreciation of property in districts from which the schools have been removed.*

The cost of consolidation is the weighty argument against it. The expense is made up of several items: (a) School building; (b) School upkeep; (c) School equipment; (d) Transportation; (e) Teachers' salaries.

(*a*) *As consolidation is a matter primarily concerning small schools it naturally reduces the number of school buildings and school departments. So that there should be a saving in respect to cost of buildings and of school grounds; fewer are required.*

(*b*) *The fewer departments the smaller the cost of janitor work of heating, of repairing, etc.; another economy.*

(*c*) *The school furniture, the seats and desks, maps, black-boards, etc., needed for the lesser number of school departments would allow a saving in expenditure, which money could be devoted to larger equipment at no increase of cost to the consolidated district ratepayers.*

(*d*) *Transportation in vans that would ensure the comfort of the child against wet clothing, etc. and exposure to inclemency of weather would cost more money, it is true, but would prevent the loss of much time and money arising from ill-health. But this added cost in dollars and cents is oftentimes counter-balanced by the saving in teachers' salaries, consequent on the reduction in the number of teachers required.*

(*e*) *Consolidation does not necessarily increase the amount of school grant that may be voted to the teacher.*

NEW BRUNSWICK.

The first Consolidated School established in this Province was one of the Macdonald series at Kingston, in Kings County. Three others are in operation also; one at Riverside, in Albert County, another at Florenceville, in Carleton County, and one at Hampton, in Kings County. Several other districts have the matter under consideration, but have not yet taken definite steps to realize it.

In the report of the Special Agricultural Commission appointed in 1908 to enquire into the agricultural conditions of the Province and the means of improving them, the question of consolidating schools was considered. A series of questions dealing with the matter were sent to the Boards of Trustees of the 1,420 rural school districts. Replies were received from 219 of these to the following effect:—24 districts would support Consolidated Schools and 106 districts were not in favour of such schools, 22 districts expressed themselves as willing to submit to higher taxation for consolidation purposes, and 117 districts did not want higher taxation for such purposes.

So far as the schools answering represent all the districts, this shows that only about 20 per cent of the trustees of the New Brunswick schools favoured this method of improving the status of the rural schools two years ago. From the fact that no further consolidations have taken place recently, this might be accepted as the present attitude of public opinion on the question.

QUEBEC.

The question of consolidation is not an issue at all amongst the French Canadians. Their farms are deep and narrow and the families very large; as a consequence all the rural schools are attended by 30 or 40 pupils each, and are within reasonable distance from one another. It is quite different with the sparse school population in the English rural parts of the Province.

The need and advantages of consolidation are pretty generally recognized by the English population in the rural parts. The opposition to any proposal to consolidate schools generally comes from the ratepayers who live in close proximity to the schools that would disappear with consolidation; these people generally prefer an inferior school close at hand to a better one at a distance. So far, only two Protestant schools in the Province are consolidated.

The law permits School Boards to close the school in a district where there are less than ten children of school age, and, if necessary, have the children conveyed free of charge to one or more adjoining schools of the municipality. They may also annex the district temporarily or permanently to one or more other districts, and buy vehicles for transportation purposes. During 1909 the Protestant elementary schools have diminished by twenty-three in number, and presumably the pupils in the districts where the schools have been closed are attending schools in neighbouring districts. In some cases parents are allowed the remission of their taxes on condition that they convey their children to the nearest school when conveyance is necessary.

MANITOBA.

The problem of improving the Rural Schools in this Province has been boldly attacked under the leadership of the Hon. G. R. Coldwell, Minister of Education. The conditions of settlement are not the same in Manitoba as they are in Old Ontario; farms are larger and school

population in many districts is sparse. With a progressive people who are keenly interested in securing good educational facilities there has been in consequence a decided interest taken in this phase of school organization. At the present time there are 16 Consolidated Districts in operation, with some of these covering 50 to 59 square miles of territory and having schools which have cost as much as $16,000, this including the equipment. The majority of the consolidations have been made in conjunction with a small town or village; such are in operation at Tilston, Melita, Miniota, Virden, Darlingford, Holland, Starbuck, Teulon, Elphinstone, Dauphin, Gilbert Plains, and Sperling. At St. Patrick and Brigdenley the consolidations are strictly rural propositions.

Interest is growing in the question and a series of meetings to discuss it is being held throughout the Province this winter. The Department of Education has arranged for an officer to devote his whole time to the work from early in November until next midsummer. Meetings are held wherever a district wishes to hear the matter explained.

NOVA SCOTIA.

A large number of consolidations of a small rural type have grown up in the Province in the past few years. About 60 school sections in all have condensed into about 28 schools, with two or sometimes three united at one centre.

The Macdonald Consolidated School, established at Middleton, continues in operation with only one of the original outside sections sending in all its pupils. Advanced pupils from the other surrounding sections continue in attendance, however. This is somewhat similar to the situation in regard to the Guelph school.

Dr. MacKay, Superintendent of Schools for Nova Scotia, writes: "It looks very much at present as if is it easier to provide a teacher and a small school house than to transport the school three or four miles to a well-graded educational institution; and because it is cheaper, it is considered to be better. There is need of education on the difference and value between the cheap miscellaneous rural school and the well-graded village school. I find also that pupils become tired of starting so much earlier in the morning in order to be ready for the vans, and of the monotony of the ride in the van both to and from the school house. They appear to enjoy the freedom of travelling on the road a short distance better than an enforced long ride every day. We find it to work at present only in attaching a small settlement which can hardly support a school by itself to the nearest school centre. That means, as a rule, that our consolidations consist of the union of one or two small sections with a central one. This we find to be useful and every year a few more of such small consolidations are being organized."

SECTION 2: WINTER EVENING SCHOOLS.

WÜRTTEMBERG.

In many States of Germany, of which Württemberg may be taken as an example, instruction in Agriculture in the rural districts is universal and compulsory. Nature Study and object lessons are given in every village school, and the teaching of Agriculture begins in the Winter Evening Schools. This is a development of the original Sunday evening school, where instruction, partly general and partly agricultural, was given to young men between 14 and 18 years of age. Out of this grew the week-evening schools held in the winter months. Pupils are required to attend at least two evenings in the week during 6 months of the year. In Württemberg alone there are over 700 such schools, with a total attendance of over 16,000 pupils. Württemberg has a total population of about 2,400,000.

ENGLAND.

In England much attention has been devoted in recent years to the consideration of the best means of organizing and promoting the Rural Evening School work. Various local Education Authorities have begun to organize

and then to supervise such schools. With that, provision has been made of Vacation Courses for teachers in Nature Study, in Rural Science, and in minor rural industries. The general opinion expressed by the Board of Education is as follows:—

"The two parts of the course, which in the absence of satisfactory terminology may be described respectively as the "human" and the "technical" sides, are of equal importance. The former promotes the latter: indeed there is evidence that a purely "technical" curriculum may, for want of variety, repel the students. Both parts of the course if properly carried out will develop intelligence. From another point of view also the work of an Evening School has a two-fold aspect which requires that the course of training should be a two-stranded cord. One strand is individualistic; it helps the student to "get on" in life. The other lifts him on to a higher plane of thought and feeling as a member of the village community.

"Bearing in mind the fact that the total normal duration of the class meetings should not be less than four hours per week, it is found that in the best organised schools a suitable distribution of time is that in which one to one and a half hours are devoted to the "human" subjects and two and a half to three hours to the "technical" subjects."

The following are sample courses:—

Course A:—	
On one evening per week	Reading from a good modern author; composition based on the reading; and dictation—one hour.
	Principles of gardening—one hour.
On a second evening	Rural science—one hour.
	Arithmetic; sketching and simple scale drawing of garden plots and the like—one hour.
Course B:—	
On one evening per week	English (including local) history—one hour.
	Arithmetic and mensuration—one hour.
On a second evening	Woodwork and drawing—two hours.

SECTION 3: VARIOUS FORMS OF INSTRUCTION IN EUROPE.

SCOTLAND.

There is a growing appreciation of the differences between the needs of communities and also the needs of individual children. These must be considered for the highest interest of the individual as well as for general welfare. The Supplementary Courses provide for differentiation in the elementary classes. They are given during the last two or three years of attendance at the public board school. The usual age at which children begin them is from 11 to 12 years. They must first have passed the required test of qualification. The

subjects of the Supplementary Courses are arranged in four groups (1)Commercial, (2) Industrial, (3) For Rural Schools, (4) Household Management for Girls. Detailed schedules are published by the Scottish Education Department under each division to serve as models. Special grants are made by the Department to Local Authorities conducting these courses. The special subjects in the Supplementary Courses for rural schools are Nature Study, Geometry, the study of newspaper market reports and the keeping of accounts. Woodworking or Ironworking is optional. The Code of Regulations insists that the instruction in the above subjects must throughout be of a practical character.

When the instruction is of a sufficiently practical character, given through the medium of a School Garden, special grants are allowed. Many gardens were started originally for the purpose of Nature Study, and they are now turned to the service of practical training without loss to the earlier interest.

The inspectors and experts interested in the practical side of Rural Supplementary Courses generally agree as to the essentials for success. Teachers, it is declared, must be specially trained for the work; counties must aid by maintaining staffs of itinerant teachers and by helping in the expense for equipments, such as garden tools, workshops, etc., and small parishes must be combined for the support of Supplementary Courses at a common centre. It is necessary also to do a great deal of missionary work to overcome the preference for theoretical studies and the opposition of parish school boards to increased expenditures.

IRELAND.

The Winter Agricultural Courses in Ireland belong more to the class of work done by the Travelling Instructors than to that of a definite, located and organized school. They are usually held during two half days a week for a period of four months during the winter. The Instructor is thus able to take charge of three classes and carry on educational work at three different places every week. (For further information see Report on inquiry in Ireland in Part III.)

DENMARK.

The Agricultural Schools of Denmark are carried on during the winter and generally provide only one course of six months' duration. They are attended by students who have already received a good elementary education, have worked for several years after leaving school, and in many cases have attended one session of a People's High School. In Denmark as in France, and also in many cases in Germany, the Agricultural School is the property of the Principal or Director and the farm attached to it is farmed by him for his own profit in so far as he can make it pay. There are advantages in that case from the fact that the various farm processes, as they are observed and taken part in by the students, are all upon a scale and of a character similar to what they would carry out on their own farms at home. The disadvantages are that the students may be kept too much at work for profit without due regard for their instruction and training. This, however, does not apply to the Agricultural Schools of Denmark. (For full information see Report on inquiry in Denmark in Part III.)

FRANCE.

In France instruction in agricultural subjects is given in the Superior Primary Schools, at the Farm Schools, at 38 Practical Schools of Agriculture, and for those who are able to proceed further at the 3 National Schools of Agriculture. Particulars regarding these may be found in the report on Agricultural Education in France in Part III.

GERMANY.

Since it is not considered that details of the organization or of the courses in Agricultural Schools would be useful in Canada, only an outline is presented. The features of importance are the general adhesion of the rural population to the belief that education is advantageous to agriculture and the working out of their salvation by making that belief vital in the affairs of the locality.

The farmers live in villages and not on isolated farm steadings as in Canada, and almost every village has its Agricultural Club or Association in touch with a Provincial Chamber of Agriculture.

There is a lesson in those matters for Canada. The policy of village settlements rather than isolated homesteads is well worth considering, and recommending for the unsettled districts; and even where surveys have been made and settlement effected the question need not be looked upon as finally settled. Contented women, good chances for the education of the children, and a reasonably richly developed social life are in the long run of immensely more consequence than conveniences for growing crops. The place of the latter is to minister to the former. What shall it profit a country to be called, or to be, the Granary of the Empire if it loses the soul of happy rural life?

The Lower Winter Agricultural Schools of Germany were founded to enable the young sons of small farmers or peasants to acquire a theoretical training for their work without having to give it up during the summer months. Instruction is given during the winter only, and the whole time of the student is devoted to it during that period. The schools are quite inexpensive and have been successful in improving the agricultural conditions of the locality. They increased rapidly during the past fifteen years, there being now over 200 of them in Prussia.

In Germany some of the Realschulen (that is a Secondary School paying attention chiefly to science and mathematics) have an agricultural top. These Secondary Schools with an agricultural department from 13 or 14 to 16 or 17 years of age are quite different from the Agricultural Schools of Denmark with only a six months course.

There are in Prussia also some 20 Agricultural Middle Schools. These are attended by about 3,000 pupils and are supported in part by the State and in part by the Province, District, Communal Funds, Societies and Endowments. In other States of Germany there are some 130 Agricultural Schools of this class. They have a general Agricultural curriculum. Besides these there

are large numbers of special schools such as Dairy Schools, Schools for Bee-keeping, Poultry-keeping, Horticulture, etc.

In the State of Württemberg, for example, there are four Farm Schools, one in each of the four departments of the Kingdom, which are different from these Agricultural Middle Schools. The course is for three years. Students are admitted from 16 to 20 years of age. They live at the Schools, which are situated on Crown land. They give their labor on the model farm which is attached to the School in exchange for instruction and board. In summer the students work about ten hours per day and receive theoretical instruction during 12 hours per week. In winter they work about 8 hours per day and receive theoretical instruction during 16 hours per week. (For further information see Report on inquiry in Germany in Part III.

SECTION 4: COUNTY OR DISTRICT AGRICULTURAL AND HOUSEKEEPING SCHOOLS OF THE UNITED STATES.

The Commission is of opinion that County or District Agricultural Schools, with courses covering two winters, following closely the lines of the Wisconsin County Schools of Agriculture and Domestic Economy and the Danish Agricultural Schools, would be of the greatest service to Canada.

These schools for Canada would differ from Rural High Schools, inasmuch as they would be residential Schools and would provide opportunity for education for those, chiefly young men and women from 17 years of age upward, who had already been engaged in practical work for several years after leaving the Elementary School.

SMITH'S AGRICULTURAL SCHOOL AND NORTHAMPTON SCHOOL OF TECHNOLOGY.

This School may be cited as the place where the most progress has been made in carrying out the Co-ordinated Courses of Home and School work. The Commission was most favorably impressed by the character of the institution itself and the evident effectiveness of the courses for the education of young persons for agriculture and industry in the locality.

The Institution.

Smith's Agricultural School and Northampton School of Technology, located at Northampton, Mass., is an independent agricultural and industrial school, opened in 1908, supported in part by the State and in part by the income of funds bequeathed to Northampton by Oliver Smith. This fund now amounts to about $310,660 and yields annually approximately $12,000. The total annual maintenance budget of the school is about $20,000. The institution is controlled

by a local board of trustees elected by the voters of the city of Northampton. It has a main building costing $60,000, and farm buildings, equipment, and land valued at $25,000. The farm contains 100 acres.

A striking feature of the school plant is the main building, which consists in fact of four separate buildings arranged in such a way as to inclose completely a rectangle one-quarter of an acre in extent and about twice as long as wide. At the front, on one of the long sides of the rectangle, stands the office building, containing several recitation rooms; at the ends are the science building and the trades building, respectively; and in the rear is an auditorium with raised seats facing the inclosure. The inclosed rectangle is covered with a trestle roof, the four buildings with their connecting walls forming the sides of this inclosed and covered arena, which is well lighted from above. The partition between the arena and the auditorium is movable, and when pushed aside allows persons seated in the auditorium a view of the entire floor space, nearly one-fourth of an acre in extent. The buildings are of brick and limestone. The floor of the arena is cement.

Students 14 years of age or over are admitted to the school without further entrance requirements. They are allowed to remain only so long as they continue to show themselves able to do the required work. Three four-year courses of study are given, each strictly vocational in its purpose, designed respectively to prepare for farming, for mechanical work, and for housekeeping and home making.

On the occasion of the Commission's visit, the School was attended by about 120 students, 40 in the Industrial Department, 22 in the Agricultural Department and 60 in the Housekeeping and Homemaking Department.

The following information was gained, partly from observation and partly from "Conversations" with Mr. Rufus W. Stimson, Agent for Agricultural Education of the Massachusetts State Board of Education, and formerly Director of Smith's Agricultural School.

Mechanical Department.

To ensure that class-room instruction shall directly relate to shop work, first and second year boys are together in the shop under one man, who the next week teaches them shop mathematics. He is a skilled pattern-maker, hired out of the trade, and not a school teacher. He is looking at this matter from a practical point of view to get at the minimum of mathematics for classes in his department. The same thing is true of the instructor for the upper two years. He deals with the mathematics and shop science of those boys.

To widen the students' understanding of the field of industry as a whole, the school subscribes for about 25 papers and magazines, and the instructors mark articles which they assign to boys in the senior and the junior years to read, digest and make reports. When the written reports are up to a certain grade in spelling, penmanship, grammar, etc., the teacher hands them to the head of the mechanical department, and the boys get mechanical credit as well as English credit for them. That is a strong incentive to good English work.

Agricultural Department.

Emphasis is laid on productive work in the Agricultural Department also—it being directed to result in a crop or something else. With the opening term in the fall of 1911 the school looked forward to the crop of 1912, not only on the school farm, but on 22 farms represented by the boys who were taking the course. The method of training is this:—one agricultural instructor takes his vacation in winter, being with the boys at the school in the fall and spring terms. Through out the summer he visits their farms, studying their actual home conditions and helping them to carry out on their own land Farming-Projects which they planned with him. Some of the boys who live in the Eastern part of the State get work on the school premises until the middle of June, and are then allowed to substitute other work till the middle of September.

The school instructor visits the farms, knows what each pupil is doing, and gives credit for what is done. The main consideration is given to boys who live on their own farms within striking distance of the school, and who intend to be farmers.

Close to Practical Farming.

The school does not own a herd of cows; it sold one it did own, because it wanted to make a thorough-going test of dealing with strictly economic propositions in the school work. It is hard to convince anybody that a school proposition is or can be made a strictly economic proposition. Booker Washington's famous Tuskegee Institute in Alabama is a proposition closely approximating to the strictly economic. The vocational form of training is followed, and Washington himself says that he is always going up to the point of breaking even or turning a profit—never getting above it. It is his business, as soon as the school has developed a boy so that he can profitably employ his own labour, to send him out where he can employ himself for his own or somebody else's benefit. In vocational training you are always just below the line of any economic return for the labour of the pupils.

The Follow-up System.

What Northampton is trying to do—without any necessity for doing it, because they had the land and equipment, and could have done the other thing—is to make a thorough-going experiment in the utilization of home farms for practical work, and of the school premises for theoretical or scientific work, with the institution on the "follow-up" system. In Mr. Stimson's opinion the difficulty with such first-rate schools as the Minnesota Agricultural School, and the Alfred School in New York more recently created, is that the boys are taken away from the home farm for six months and pumped full of theory. So far as they have been given practical training it has been under artificial conditions and not under out-door conditions such as obtain on their home farms. Then the boys are cut loose and sent back to the farm to work on without any guidance from the school.

Theory and Practice.

Over and over again in Massachusetts and Connecticut complaints have been made that graduates of the Agricultural College came back home and amounted to nothing, "therefore there was no use making any State appropriation to the Agricultural College." The officers have to combat that every year in the Legislatures in asking for their appropriation. The deficiency is not with the boy, but with the system; the boy has been asked to do the impossible. Practically every boy learns more easily by seeing and hearing than by reading, and certainly succeeds better when he is able to take a theory and test it out immediately, rather than defer the application until some future date.

With a good deal of school work there is so much theory and so little opportunity for practice that it gets to be a training under somewhat artificial conditions so far as it is goes at all—chiefly observation of what some body else is doing, and a study of theory. That is far better than nothing, for you are going to establish ideals there, and you are going to give a certain fund of information, and the boy of abstract mind will grasp the principles and hold them before his mental vision with just as much tenacity as though he had fed the ration. That type of boy will profit to a considerable extent by that kind of training; but the type of boy who, more than likely, is going to be found on the farm in future, is not the type that can turn that kind of training to the best possible account.

Working it out in Potatoes.

The following two examples are given substantially in Mr. Stimson's words The thing is to commit the school to considering the farms of the boys as going enterprises, and the things on those farms that the boys could do to improve their knowledge and farm practice. The school could not interfere to any considerable extent with the farm. That would have to be "a boy matter"; the Smith School authorities have recognized that frankly. Take an example from a crop of potatoes of ten acres. The father—a man of moderate circumstances—depends on that crop; he needs the boy's help in growing that crop. How can the school fit in its plan under such circumstances? It can agree with the father that the boy shall have one quarter, one-half or three-quarters of an acre, or say a tenth of the whole crop to grow, with the privilege, right and every facility for doing on that acre what the school believes to be the best practice. His father may do as he likes with the rest.

The father would carry out his plan on the nine acres, and the boy would manage his acre as the instructor told him was the best. He would cultivate it either flat or by hill cultivation, depending on the nature of the soil and what he believed was the best method. He would spray when he thought best, and so on. The boy would have a stake in the crop. He might "get by" as the saying is, on 20 hills, and get a big rate per acre of return, through some. quality of the soil or some chance circumstance; but it is to "get by" with the

acre or ten acres that the farmer is concerned. It is the really productive work on an economic scale that gives the boy a stake of considerable magnitude and the incentive to this work.

Working it out with Cows.

Last winter the boys were studying cows. They had studied breeds and type and feeds, and had found there was a balanced ration, a certain standard; then they began to study their own problems. Each boy brought in the problem based on what his farm produced, and each one figured out what combination of those feeds would give him an approximation to the balanced standard. In all cases it was found among those boys that the ration that was being fed was an unbalanced ration. The problem was to get the boys to make up their mind what feed they ought to buy considering the market, and the standard, in order to supplement the home-grown feeds and give their cows a balanced ration. After they got that all figured out, the next thing was to decide that they would feed the balanced ration to one cow. The instructors had led up to this by another thing; when studying types of cows the boys had studied economy of production—whether a general type of cow would give a better yield than the dairy type. That led to weighing milk and testing for butter fat; they had had weighings for the month before they got to the point where they asked the boys to feed. One case in particular was that of Bartlett, whose father has pure-bred Jerseys; the boy was doing the feeding. The school supervisor found that Bartlett came to the school not because he wanted to come himself, but because his father wanted him to come, having said: "If you are going to be a farmer you must go to that school and get all you can to help yourself." Bartlett was not one of the shining lights in the school, and he knew it, so he said to himself: "As soon as I am 14 I am going to quit school and work; I can almost do a man's work now." Bartlett began to stand straighter when the boys in testing their cows found that Bartlett had the cow that gave the highest butter-fat test of the whole school. When the question came up as to the boys feeding one cow at home, Bartlett said he didn't think his father would want to bother. The teacher in charge thought that if any man would bother, it would be Bartlett's father, and he said to the boy: "Look here, Bartlett, what would your father say if he saw you go to the grain bin with a scoop-shovel, fill it, throw it out in the barn-yard and repeat that operation at night?" The boy said he guessed his father would think him crazy. The teacher said, "Well, according to your figures that is exactly what you are doing, isn't it? You are feeding more grain than you can expect to get a reasonable return for. You had better ask your father if he will let you feed." All the other boys had the privilege of feeding one cow. Bartlett came in a few days after and said, "Father says I'd better not bother with one cow, I'd better feed them all, if he was throwing grain in the barn-yard." Within a few days all the cows except two had shown a very considerable increase in milk on a ration that was costing less than before. He was getting the advantage

at both ends—less cost and more product. Those cows that did not show an increase were too far in the period of lactation to be influenced by any system of feeding.

At Rural High Schools.

Mr. Stimson intimated that it is proposed to put the plan outlined into operation in connection with Rural High Schools. It does not call for expensive equipment at the school, the vital things being the boy, the instructor, and the home farm. The State is prepared to help to pay half the running expenses of schools like Smith's School. It will also pay two-thirds of the salary of an agricultural instructor who will give all his time to agriculture, and do this type of co-operative work on the home farm in the vicinity of any school in the State up to the limit of $10,000 for the State at the present time.

Each year of instruction would be complete in itself, so that if a boy dropped out he would have something he could use. One year would lead to another year; and it is proposed to bracket this training in groups of two years. To reinforce the influence on the boy there is a daily time-sheet marked off from four o'clock in the morning till nine at night. These are rendered in duplicate. The boy keeps one for himself and furnishes the other to the school with an "O.K." on his part. Those sheets go to the office of the State with the "O.K." of the inspector—all of which tends to emphasize the attention to to home work of a productive nature.

The following is a sample of these daily time-sheets :—

SESSIONAL PAPER No. 191d

Agricultural Student's Daily Time Sheet.

SMITH'S AGRICULTURAL SCHOOL
IN CO-OPERATION WITH C. A. SMITH, Northampton, Mass.
Name of Parent, Proprietor or Superintendent.

Day of Week, *Tuesday*, Date *April, 28,* 1911.

	KIND OF WORK Include implements used, number of loads, etc.	FIELD	MAN HOURS	HORSE No.	HORSE HOURS
4.30					
5.00	Care of Horses. See Note 8		½		
5.30					
6.00	Feeding cows and milking. See Notes		1		
6.30	3 (c) and 8 Home project		¼		
7.00	Breakfast		——		
7.30					See Note 3 (b)
8.00					
8.30	Plowing for corn, 7 in. deep, 16 in. riding	A	3	3	9
9.00	plow. See Note 4				
9.30	Home Project				
10.00					
10.30					
11.00	Disking for corn (John Deere 12 disk)	B	1¾	4	7
11.30	See Note 4				
12.00					
12.30	Dinner			——	
1.00					
1.30	Hauling manure—spreader, 3 loads	A	2		
2.00	Ed. Moore helping. See Note 5				
2.30	Home Project				
3.00					
3.30	Rain—Nothing done. See Note 6		——		
4.00					
4.30	Fixing fence		1		
5.00					
5.30	Feeding cows and milking		¾		
6.00	Home Project		¼		
6.30	Care of horses		¼		
7.00					
7.30					
8.00	Supper				
STUDENT	*Stanley Smith*	TOTAL HOURS	10¾		16

REMARKS

REPORT O. K.
C. A. S., P., P., or Supt.
F. B., Instructor.

Housekeeping and Homemaking Department.

The girls who attend the School live at home, and roughly one half of their time is spent on productive work. In the cookery room, for example they fill orders for canned tomatoes and other things of that kind; in the dressmaking room, they make things for themselves. At "Commencement" girls were wearing gowns such as they never wore before and such as they could not have worn, considering their financial circumstance in life, if they have been obliged to pay for anything more than the raw material. The nice artistic work that had gone into their dresses had been their contribution, and they were as finely gowned as any girls in town, so far as workmanship and materials were concerned. The girls are very careful of their material because they have bought it. There is very little sample work done. If a teacher finds that a girl cannot make a buttonhole she gives her some exercise work on buttonholes of the size that are going to be used in a dress, and the girl is merely held away from buttonhole work on that dress until she cannot spoil the garment.

The Academic is not Neglected.

The teachers of English teach English to the girls and the Agricultural as well as the Mechanical students, but in separate classes. For example, Shakespeare is studied some of the time. The boys read "Julius Caesar" last year, and Mr. Allen of the State Board of Education happened to be present when the exercise was going on. He said, "The idea of Shakespeare for boys of this type!" He went into the class, where there was a very interesting discussion; the boys liked to reel off those big speeches of Julius Caesar and had prepared themselves for it. Different parts had been assigned. It was a very interesting exercise, and the boys asked the privilege of staying half an hour over at the end of the day to finish the Act that they were at. That was fairly conclusive proof that because the boys were interested in shop English, they need not be debarred from being interested in cultural English as such. But the foundation work, the essential work of the course, is the English related to the shop work.

COUNTY SCHOOL IN WISCONSIN.

The Dunn County School of Agriculture and Domestic Economy (Wisconsin) was the first school of this type started in the United States. From the statement of its courses there does not appear to be much difference between such a school and a Rural High School. However, a visit to Menomonie, Wis, brings out the fact that the practical and vocational side of the instruction is dominant. The school meets the needs of pupils in rural districts who have passed the usual rural High School age of entrance, and may have forgotten some of the academic studies or subjects of the conventional High School course, and yet who are not able or disposed to seek a course at the State Agricultural College.

The Courses of Study.

The Dunn County School has evidently realised its object, which was to enable boys and girls to acquire more intimate knowledge of the things they are to be concerned with in after life, and more ability to manage them successfully. For the young men, the main interests taken up at the school are Stock-raising, Dairying, Market Gardening, with attention to separate subjects such as soils, crops, weeds, cultivation, etc. Attention is also given to the scientific principles which underlie the processes and methods of farming. Instruction and practice are given in farm carpentry, simple blacksmithing, mending and repairing of machinery, and the operation of farm engines.

For the girls, the interests chiefly centre around Cooking, Sewing, Millinery and Home Management, with instruction in the principles of economics, of foods, hygiene, etc.

For both boys and girls courses include English, Mathematics, Elementary Science, Physical Geography and Physiology.

Historical Statement.

The following information is from the official publications of the School which is under the direction of Dr. Harvey formerly State Superintendent of Education for Wisconsin.

In 1899 the Wisconsin Legislature appointed a commissioner to investigate and report upon the methods of procedure in this and other States and countries in giving instruction in Manual Training and in the theory and art of agriculture in the public schools.

Among the recommendations in that report was one for the enactment of a law authorizing counties to establish secondary schools of agriculture and domestic economy. The Legislature in 1901 enacted a law providing for such schools and proffering State aid to the first two schools thus organized. In 1902, two schools of this class were established; one in Menomonie, Dunn county, and the other in Wausau, Marathon county. There was a good attendance at the opening of each school which has steadily increased each year.

The Legislature of 1903 increased the number of schools entitled to State aid to four, increased the amount of aid in each case, and authorized two or more counties to unite in establishing and maintaining a school.

Position of School in State System.

The chief purpose of the County Agricultural Schools, as now established in Wisconsin, is to popularize agricultural education more than can be done by a State Agricultual College. The schools are below the Agricultural College in that they are not so advanced, especially in their academic subjects. Students are admitted directly from the rural schools. Most of them would never go to an agricultural school, if this new class of schools were not brought close to

them. Some students board at home and help with home chores, others visit home at the end of each week and are dominated by the home spirit throughout their school life. Certainly these County Schools in Wisconsin reach a class of pupils that would not feel that they could spare the money necessary to attend the State Agricultural College. And yet there are students who, after getting the work of the County School, will feel like continuing their education and will attend the State College of Agriculture. Several graduates are already planning such a course.

General Equipment.

The Dunn County School of Agriculture has three buildings located on a half block in the centre of Menomonie, the county seat, Here there is room for poultry runs and a small garden for girls' practice. Philanthropic citizens and the city gave these grounds to the school. The school farm consists of six acres located on the county fair grounds nearly one mile from the school. Here the boys of the school have practice in farm, orchard and nursery work. The area may be increased from time to time.

Cost of Running the School.

The State law authorizes any county (not to exceed four) to build and equip a School of Agriculture and pay the running expense for one year. After that the State will pay two-thirds of the annual cost of maintaining the school—not to exceed $4,000 for each school. Experience shows that the annual running expense is about $6,000, two-thirds of which is paid by the State and only one-third by the County.

The assessed value of taxable property in Dunn county is about $10,500,000. Any person with an assessment of $100 will pay less than two cents to support the school. Property assessed at $1,000 requires a payment of less than 20 cents a year to run this school. Thus it is seen that the annual cost is almost nothing to the individual tax-payer in the county.

When such are the facts, all who may have had some fears regarding the matter of annual cost may feel at ease; for surely a county in an agricultural region can easily support its own "farmers' school."

Correlated Work for Farmers and Teachers.

Much agricultural information is disseminated from the Agricultural School to the farmers of the county. Directions for planting, suggestions as to varieties, combatting noxious weeds, helping establish co-operative creameries, planning barns, silos, school-houses, dwellings, devising ventilators, selecting stock, and many other subjects are taken up by the instructors with individual farmers. The school has done a great deal of milk and cream testing for farmers for the purpose of helping to improve dairy herds. On the school farm such

new crops are tried as should be used by those living in the section. Many hundreds of bulletins on special farm topics have been placed in the hands of farmers desiring information on these subjects.

A novel feature of the school's work in Dunn county is the introduction, through the rural teachers, of Elementary Agriculture and Manual Training into District Schools of the county. By an interchange of classes with the County Teachers' Training School the Agricultural School teaches the rural teachers to handle these subjects in their school in a very creditable manner.

Character of the Instruction.

In all the instruction in the Dunn County School of Agriculture the useful side of the knowledge and training given to the students is emphasized. This is the principle on which the school is founded. The extended knowledge which the farmer must have should be made as practical as possible. At every point the school is made to co-operate with the farm, the shop, the dairy, and the home. The Manual Training courses are made far more practical and useful than such courses usually are. Nearly all of the time of the classes has been engaged in making articles of use on the farm, in the home, in the school and shop. The same feature of useful training has prevailed in domestic economy, plant life, farm accounts, study of soils, poultry, and in fact all subjects.

The regular course of study covers two years of 8 months each, beginning in October and closing in May. In addition there are Winter Term Short Courses.

Winter Term Short Course.

There are large numbers of young people who, from lack of means or time, are unable to take an extended course of study, but whose usefulness in the world would be much increased by a little special training. Their earning capacity in the household or on the farm is far from what it might be. The Winter Short Course at the Agricultural School is for the benefit of such persons. The Short Course is primarily intended for persons of advanced age. Younger pupils are advised to take the regular course. The complete Short Course covers two winter terms, twelve weeks each, beginning in January and ending in March.

The following are the subjects:—

For men, first winter: Science of Agriculture, Farm Accounts and Commerce, Dairying, Farm Carpentry, English.

For men, second winter: Feeding and Care of Stock, Soils and Fertilizers, Farm Blacksmithing, Rural Architecture, English.

For women, first winter: Home Economy, Cooking, Sewing, Laundering, English.

For women, second winter: Cooking, Sewing, Millinery, Personal and Domestic Hygiene, English.

COUNTY SCHOOL OF AGRICULTURE, MANUAL TRAINING AND DOMESTIC ECONOMY IN MICHIGAN.

This school is of a similar character to the one at Menomonie, Wis. Details of its courses are given as being very suggestive and instructive for communities in Canada.

The school is located on the Agricultural School Farm, comprising 107 acres of land in the western part of the city of Menominee, the leading city of the upper peninsula of Michigan. It can be reached by a street car from any part of Menominee (Michigan), and Marinette (Wisconsin). The two cities combined have a population of 31,000 inhabitants.

The school was established in 1907 by the State Legislature which appropriates $4,000 annually. It is controlled by a County School Board of five members, four of whom are appointed by the Board of Supervisors, the County Commissioner of Schools being ex-officio member and secretary, with the same powers as the other members. The aim of the school is to furnish a thoroughly practical and scientific course in work pertaining to farms and farm homes to young men and women unable to leave home and attend college for a number of years, either because of limited means or college entrance qualification. In practical work on the school farm, the aim is to assist farmers to work out their many problems; to furnish up-to-date ideas and ideals so that the farm work may be done more advantageously and profitably; to determine the best crops for local conditions of soil, moisture and climate and by systematic selection and plant breeding to evolve varieties of grain, grasses, root crops and corn adapted to local needs and conditions.

Courses Offered.

The Regular Course covers a period of two years of thirty-six weeks each, beginning September and ending June.

The word semester here used represents a period of one half of the school year's work or eighteen weeks. The numerals inclosed in parentheses indicate the number of times a study is given during the week.

FIRST YEAR CLASS

First Semester.

For Men.	*For Men and Women.*	*For Women.*
Stock Judging (2)	Plant Life (3)	Sewing (5)
Field Crops (3)	Arithmetic (5)	Cooking (4)
Practice in Field Work (1)	Grammar (3)	Food Study (1)
Carpentry (5)	Spelling (4)	
Drawing (farm buildings) (3)		

Second Semester.

For Men.	*For Men and Women.*	*For Women.*
Soils and Fertilizers (3)	Flower, Fruit and Vegetable Gardening (4)	Cooking (4)
Insects and Weeds (2)	Poultry (1)	Sewing (5)
Carpentry (5)	Business Correspondence (3)	Household (1)
Study of Breeds (2)	Arithmetic (5)	Hygiene (1)
Mechanical Drawing(3)	Composition (3)	
Blacksmithing (3)	Spelling (4)	

SECOND YEAR CLASS.

First Semester.

For Men.	*For Men and Women.*	*For Women.*
Agricultural Chemistry (3)	Dairying (5)	Laundry (2)
Drainage (2)	Farm Accounts (4)	Dietaries (2)
Stock Judging Adv. (2)	U.S. History (3)	Sewing (4)
Field Crops Adv. (3)	Emergencies (1)	Home Decoration (1)
Practical Mechanics (2)		
Carpentry Adv. (3)		
Blacksmithing (3)		

Second Semester

For Men.	*For Men and Women.*	*For Women.*
Farm Management (2)	Landscape Gardening (1)	Domestic Chemistry (3)
Judging and Grading Farm Crops (3)	Civics (3)	Home Nursing (1)
	Commercial Geography (3)	Serving (1)
Feeds and Feeding (3)	Thesis (1)	Sewing (4)
Practice in Field Work (1)		Millinery (1)
Farm Machinery (2)		
Cabinet Making (5)		
Architectural Drawing (2)		

Writing and music are given one period a week each for the entire school year to all the students. Debating and parliamentary practice is given two periods, every second Friday during the year.

Students who satisfactorily complete the work of the regular two year course, of nine months each, are given a Diploma upon graduation. Those graduating from the Student's Short Course are granted a certificate.

The Material Equipment.

The six school buildings include a barn 36 x 70, implement shed 18 x 56, superintendent's and janitor's residences, poultry house and main building 45 x 90, three stories high. The basement or the first floor is devoted to carpentry, blacksmithing, dairying and three store rooms. The second floor to domestic science, chemical laboratory, museum, mechanical drawing room and superintendent's office. The third floor is given up to a large assembly room, library, field crops, two class recitation rooms and cloak rooms. The student's house contains dining room, laundries, and sixteen living rooms for students, so divided that one half is occupied by young men and the other half by young women. The rooms are furnished with bedstead, mattress, two pillows, bureau, table, rocker and chair. The rooms are heated by steam and lighted by gas and electricity. The "Home" will accommodate thirty-two students. A regularly appointed matron is in charge of the Home who devotes her time to the comfort and welfare of the resident students.

Board and room at the Student Home are furnished at $2.60 a week to resident students. A considerable portion of the crops grown at the School Farm is made use of in the kitchen, and in that way the cost of living to students is materially reduced. Each student intending to room in the "Home" must provide himself or herself with four bed sheets, two pillow cases, a blanket, a comforter and two towels. All of these can be purchased for about $6.

Neighboring farms are utilized for instruction and illustration in live stock, silos, special crops, fruit, orchards, farm buildings and machinery, etc. Students pruned over 700 fruit trees in the county last year. The school has now been in operation for four years and is proving its usefulness to the farmers and others in this section of the State in many ways. The enrolment of students the past year has by far exceeded the expectation of the most hopeful. Most of the students come from the farms, some of these using bicycles and teams in going to and coming from the school to their homes every morning and every evening, a distance ranging from three to eighteen miles.

Qualifications for Admission.

Studends are admitted at 14 if unusually proficient in common school branches. Students holding eighth grade diplomas or certificates issued by the county commissioners are admitted without further examination. Students who have completed eighth grade work in the rural school, and those who have equivalent training in other schools are admitted upon presenting proper records of their work. Applicants for admission whose home schools cannot afford complete instruction in the common branches are admitted provisionally. Applicants having only a limited amount of preparation, and who wish to take up the regular work of the school with a view of graduation, must pass an entrance examination in arithmetic, grammar, spelling and reading. Students from the city or graded schools are not admitted until their former records have been passed upon by the superintendent.

No entrance examination or special qualifications are required and no age limit is prescribed for entrance to the Short Course. The school is free to all resident students of the State of Michigan. Students from other States are charged $1 per month.

Subjects of the Courses.

Agricultural Chemistry:—

In agricultural chemistry the object sought is to give the student a reasonable amount of training in elementary science, in the more common chemical elements and their chief compounds. These lessons lead up to the principles underlying the practical work in the everyday farm life. Laboratory work leads to observation of the more important phenomena in the field of chemistry. The work for boys is along practical lines in dairying, soils and fertilizers, insecticides and feed stuffs. That for girls includes analysis of foods, value of foods, laws governing their correct use, their digestibility, composition of plant and animal bodies.

Animal Husbandry:—

In animal husbandry the course is fitted to the needs of the up-to-date farmer and to those who intend to become managers of large special and livestock farms.

Arithmetic:—

The instruction deals with problems which give the student thorough drill in practical labour-saving methods, such as will be of use to him on the farm. Drill in measurements of material extension, capacity, percentage and the application of its principles to all kinds of farm problems.

Blacksmithing:—

The object of the work is to enable students to repair and place in position the broken or otherwise injured parts of machinery commonly found about the farm. The work covers methods of firing, the use of different grades of coal; drawing out, shaping and welding iron; brazing rings with copper; chisels; fitting water and gas pipe; chiselling and filing; thread cutting, tempering and other useful work usually found about the farm.

Business Correspondence:—

A short and useful course is given in the principles of letter writing, billing, invoicing, making out receipts, contracts, deeds, mortaging, farm accounts showing profit and loss in any branch, settling estates, notes, postal regulations, laws governing the foregoing, and other information such as the farmer needs to have in executing his work on the farm lawfully and successfully.

Carpentry:—

The course in carpentry is designed to give the student a practical training in high class work, and also to establish confidence in himself in the use of tools. The work covers sharpening and handling of tools, laying out work, making trestles, tool chests, tool boxes, farm gates, tables, rafter cutting, greenhouse and hot-house construction, barn and house models, in short, everything pertaining to a neat high grade class of work for the farm and the farm-house.

Civics:—

Civics is taught so as to give the student a good understanding of the necessity, origin and nature of the different forms of governments. Beginning with the organisation and management of local institutions, such as school districts, townships, county, village city and state and carrying up this relation to the general government. This course aids the understanding of the principles of law, and cultivates patriotism and an intelligent appreciation of our free institutions. It relates itself to making the student a useful, honored and law-abiding citizen of the community in which he lives.

Cooking:—

The purpose of the course in cooking is to give the young woman a sufficient amount of practice in the kitchen to illustrate the principles brought out, and to train her to make discreet and intelligent use of the food materials at her command at her home. Cooking extends through a period of two years ,and in the first year covers the study of fire, water and air; cooking starchy foods, cooking with fats, cooking meats, cooking food mixtures, such as biscuits, muffins waffles, cakes and cookies; making salads, bread, candy, sugar frosting, ice cream, cocoa, coffee and tea. The second year cooking includes work in the study of bacteria, canning pickles, fruit and vegetables, jellies, and preserves, invalid cookery and the study of food rations, bills of fare, dietaries in the best and most approved way.

Dairying:—

The purpose of the course in dairying is to give the student uesful training in the handling of dairy herds and the farm dairy. The work in the laboratory covers a study of milk, the different methods employed in testing for butterfat, in whole milk, skim milk, cream and its acidity, curd test, fermentation test, the bacteria test, the Irish moisture butter test, and other tests for preservatives. The use of lactometers and thermometers. The handling of different kinds of hand separators, the principles involved in ripening and churning of cream under farm conditions. Practice is also given in detection of milk adulteration, milk inspection and testing cattle for tuberculosis.

Drawing:—

The object of the drawing course is to give the student a better understanding of the work pertaining to the most modern rural architecture; how to do the work more systematically and economically than he has been ordinarily doing. It treats of straight line, angle, circle, shading work, lettering, stencil, flat and relief designing, outdoor sketching, perspective and model work. It also includes plans, farm homes, barns, stables, silos, wood, stone and cement structure.

Embroidery:—

The embroidery work is intended to show girls the use of the most modern methods in knitting, crocheting, darning lace, making eyelets, French shadow work, etc.

English:—

English composition includes oral and written drill in the correct use of different forms of speech in everyday life, including punctuation. Courses are also given in Grammar, Writing and Spelling.

Live Stock:—

The live-stock course covers feeding, breeding and caring for stock; study of animal organs as related to laws of nutrition and breeding; composition and nutritive value of feeding stuffs, field crops, working out rations.

Field Crops:—

The course in Field Crops gives a thorough understanding of latest methods in handling them; teaches how to adapt and breed grains and forage plants for various soils under different conditions of fertility, moisture and climate; how to select seed oats, barley, rye, corn, sugar beets, etc, millet, flax, clover, timothy and other commonly grown small grains and grasses. Particular attention is given to the different methods of cultivation of grain, root crops and corn; storing, grading and judging of grains and grasses. Weeds and insects are also studied; the cause and remedies of the more common plant diseases, as the mildew, smut, rust, etc., and their relation to crops they attack, are taught. Practical applications of sprays are made. Abundant practice is given in seed testing, for vitality and power of germination.

Farm Machinery:—

The farm machinery course acquaints the student with the different parts of machinery, their construction and the principles involved when the machine is in working order. The student makes special adjustments with reference to durability of parts. Gasolene engines, seed drills, harrows, ploughs, mowers, cream separators and self-binders are studied.

Food Adulteration:—

The object in giving the work in food adulteration is to acquaint the student with the most common adulterations and the foods in which they are apt to occur. The different tests for their detection are taught and discussions of pure food laws encouraged.

Farm Management:—

The farm management course is chiefly designed to bring before the student, in an economic way, all that he has learned in the school as regards facts, principles, sciences and practices in the field of agriculture. It includes various plans and schemes in the selecting, organizing and conducting of farms; also studies with reference to gain or loss in planning rotations and cultivating grains, root and forage crops; managing fields, laying out roads, fences, ditches and lanes; in short, a proper business and executive management of farms.

Fruit, Vegetable and Flower Gardening:—

The course offered in fruit, vegetables and flower gardening gives the student a thorough working knowledge of the principles and practices of the most important lines of gardening work. It includes practical work in the orchard and garden, hot-beds, forcing-houses, cold frames, their construction and manipulation. Methods of planting, cultivating and managing garden crops Principles of pruning, grafting, budding trees, training grapes and studying landscape gardening. The causes of plant disease and insects are discussed and remedies for combating the same are taught. A free use of State and Government bulletins pertaining to this work is made.

Home Nursing:—

Home nursing deals with a study of the composition of the human body; digestion, food in sickness, disease such as scarlet fever, measles, consumption, etc., lifting and handling of patients, local applications, emergencies and bandaging.

Household Economy:—

Household economy is the study of the different sources of income, particularly with reference to the farm, taught from the standpoint of existence, comfort, culture, and philanthropy. The work comprises furnishing houses, decorating houses and cost in maintaining them.

Household Hygiene:—

The purpose of household hygiene is to give the student instruction in taste and the laws of hygiene that should influence the selection of styles of building, furnishing and maintaining a house. Work is given in the disposal of water, heat, light, surroundings, insects, such as house flies, mosquitos, ants and bed bugs. Government bulletins along these lines are also studied and discussed in the class.

Laundering:—

The laundering course teaches the principles of laundering as is ordinarily done in a modern home. It covers a study of water, soap, starch, washing blues, acids, disinfectants, washing and ironing flannels, cottons, colours, and other useful things.

Millinery:—

The aim in giving millinery is to teach young women how best to make use of materials with the means at hand. This work is given in the Fall and again in the Spring. Fall millinery includes wire and buckram frames, renovating tinting, remodelling, preparing of trimmings, making folds, bows, hats, etc. Spring millinery consists in studying styles, materials, making lace, embroidered hats, etc.

Music:—

Chorus music is taught in general exercises to all members of the school. Music is considered a valuable factor in home and social life.

Plant Life:—

The course acquaints the student with the workings of the natural laws in growth and habits of plants. Seeds and plantlets of oats, corn, clover, potato, sugar beet, bean, radish and acorn, their similarities and dissimilarities in structure, power of germination and vitality are studied. Functions of root, stem, leaves, buds, flowers, fruit and seed are taken up systematically. Magnifying lens and microscope are used freely whenever necessary and possible.

Poultry:—

The poultry course gives the best methods of raising feeding and managing fowls for the home and for the market; egg production, marketing, managing incubators and brooders; planning and building poultry houses, etc.

Practical Mechanics:—

The work includes pattern making, moulding and casting. Working in Portland cement, rope splicing and knot tying, harness repairing and varnishing; also in home decoration both interior and exterior.

Practice and Science of Agriculture:—

During both the first and the second years the young men spend four hours of each week in doing practical work in the fields barns, shops and orchards. The exercises and lessons cover such work as planting, cultivating, hoeing, harvesting and storing crops, making drains, planting, grafting and pruning trees, laying out drives and lanes, building fences, repairing and oiling harnesses, making halters, setting up farm machinery. Work is also given in most approved ways of manure spreading and different methods of ploughing in the field, etc.

Sewing:—

The work is designed to train the student in the use of healthful and appropriate clothing and also in the needle work of the home. The work extends through two years. The first year's work covers model work, such as stitches, button holes, hems, darning and various kinds of mending and patching, drafting patterns for and making a suit of underwear. The student obtains much practice in hand and machine work during the year.

The second year's work consists in drafting, designing and making patterns for heavy and thin dresses and shirtwaists. Each girl makes her own graduation dress.

Soils and Fertilizers:—

The work in soils and fertilizers familiarizes the student with the origin, formation, composition, tilth and fertility of different soils and different commercial fertilizers. It includes lectures and laboratory work on soil temperature, movement of moisture, preparation of seed beds, methods of cultivation, implements of tillage, drainage, management of clayey, sandy marshy soils. Values and preservation of farms manures, their application and the effect of various systems of farming on the maintenance of fertility. Much of this work is given in the laboratory and in the field.

Stock Judging:—

The work in live stock judging includes text book work, lectures and a study of the points, characteristics and the laws governing them in the various breeds of horses, cattle, sheep and swine. Practice is given in judging live stock by visiting with students, large live stock farms in the country during the year.

Back to the Farms.

Three classes of students have graduated and it would appear that what is true of the graduates of the Menominee school would in large measure be true of similar schools operated in other States. Of the graduates of 1909, 1910 and 1911, 72%, 89% and 76% respectively have gone back to the farm and the home. Only in one case has a city young man graduate accepted a position in a factory, but this year he attends the Agricultural College. Several graduates have filled the positions of inspectors of milk and cream for the State during the summer months for the past few years. A few have gone into the dairy business and a number have been placed in responsible positions leading up to managers of large farms. Practically all of the men graduates are on the farm or work along some special phase of farming.

Those of the young women who are not engaged on the farm or in the kitchen have taken an extra year's work in the Normal Training School for teachers in the city and are now actively engaged in teaching rural schools and are doing good work.

LEGISLATION IN THE UNITED STATES.

As showing the direction of effort and progress in the United States in connection with this movement for County Farm Life Schools, five items are submitted from the Report of the Commissioner of Education of the United States (1911).

Minnesota.

Fifty consolidated rural schools were authorized in 1905, each to have ten acres of land for instruction in farming; special State aid to not more than one school in each county. County

agricultural High Schools were authorized in 1905. For properly equipped High Schools maintaining agricultural departments approved by the State Department of Education, the State will contribute two-thirds the cost of maintenance not exceeding $2,500 annually. Ten such schools are now established, located at Albert Lea, Alexandria, Canby, Cokato, Glencoe, Hinckley Lewiston, McIntosh, Red Wing, and Wells. A recent act of the Legislature permits the establishment of 20 more such schools. These schools are to be located at Kasson, Warren, Sleepy Eye, Westbrook, Worthington, St. James, Northfield, Litchfield, Little Falls, Willmar, Madison Hector, Wheaton, Cloquet, Deer River, Milaca, Bemidji, Fergus Falls, Thief River Falls, and Spring Valley A law effective August 1, 1911, provides $1,000 to each of such high and graded schools as shall maintain a course prescribed by the High School Board in Agriculture and either in Home Economics or Manual Training. This shall not apply to any schools receiving aid for industrial courses under any other act. Agriculture is taught in the State Normal Schools at Duluth, Moorhead, St. Cloud and Winona. Three Secondary Schools of Agriculture giving three year courses are maintained by the State University. They are located at Crookston, Morris, and at the University farm at St. Paul.

North Dakota.

The Legislature of North Dakota in the 1911 session passed several Acts of importance relative to agricultural aducation. Lessons in Nature Study and Elements of Agriculture have been added to the branches to be taught in all common schools, and Agriculture may be offered as an optiona. subject for a teachers' certificate. A law to provide for the establishment and maintenance of a department of agriculture, manual training and domestic science in state high graded and consolidated schools provides that any such school having the proper facilities may, upon application to the high school board, be designated to maintain an agricultural department. Each such school shall employ trained instructors in agriculture, manual training, and domestic science, and provide at least ten acres of land suitable for a school garden. Said Department shall offer instruction in soils, crops, fertilizers, drainage, farm machinery, farm buildings breeds of live stock, stock judging, animal diseases and remedies, production, testing and hauling of cream, the manufacture of butter and cheese, the growth of fruit and berries, management of orchards, market garden and vegetable crops, cereal grains, fine seeds, book-keeping and farm accounts and all other matters pertaining to general practice. Each school shall receive annually $2,500 State aid. This Bill will not become effective immediately as the section appropriating the money for such for 1911-12, was vetoed by the Governor for the reason that the revenues of the State had been exceeded by other appropriations. All other portions of the Bill were approved.

North Carolina.

The Legislature of North Carolina in an Act approved March, 3 1911, made provision for "country farm life schools "for the training and preparation of boys and girls for farm life and home making. The course of study subject to the approval of the State Superintendent of Public Instruction, shall include practical work on the farm by the boys and practical work in all subjects relating to housekeeping and home making by the girls. A high school department shall be conducted in connection with these schools, offering the course of study prescribed under the public high school law of the State for first grade high schools. The farm life school and the high school department shall both be under the control and management of a Board of Trustees consisting of one member from each township of the county. The schools may not be located in any city or town of more than 1,000 inhabitants, nor within two miles of the corporate limits of any city or town of more than 5,000 inhabitants. For maintenace the county or township or school district, or all conbined where the school is located shall provided a school building, dormitory buildings with accommodation for at least 25 boys and 25 girls, a barn and dairy with necessary equipment, and a farm of not less than 25 acres, all subject to the approval of the State Superintendent of Public Instruction. The State will pay annually to each approved school $2,500. No person shall be employed as principal of such a school who does not hold a high school teacher's certificate on all required subjects except Latin, Greek and modern languages, including an additional certificate from the State Board of Examiners and the President of the North Carolina College of Agriculture and Mechanic Arts, stating that he has furnished evidence satisfactory to them of his qualifications by special training and practical experience for said position. A similar certificate is required for teachers for the special training of girls for home-making and house-keeping.

In addition to the regular courses these schools shall conduct agricultural farm life extension and demonstration work and shall offer short courses in farm life studies for adult men and women. All of the work of each school shall be under the general supervision of the County Superintendent of Public Instruction, the school being in all respects an organic part of the county public school system.

Craven county voted, during the past summer, to establish a school under the provisions of this Act. In Guilford county, under a special provision of the Legislature, the agricultural work began in September in three public high schools.

New York.

An Act in New York State, approved July 26, 1911, provides for an advisory board to consider plans for the promotion and direction of agricultural education and the advancement of country life. This board is to consist of twelve members, including the Director of the State Agricultural College, the Director of the State Experiment Station, the Deans of the State Schools of Agriculture at Alfred University, St. Lawrence University and Morrisville, a member of the State Fair Commission and three other persons appointed by the governor. An Act approved July 28, 1911, provides for a new State School of Agriculture to be located at Cobleskill, Schoharie county, to be known as Schoharie State School of Agriculture. The school will give instruction in agriculture, mechanic arts and home-making and will engage in agricultural extension teaching. It shall be controlled by a board of Trustees, including the State Commissioners of Education and Agriculture and five others appointed by the Governor. For establishing the school $50,000 is appropriated.

Massachusetts.

Cities and towns may establish independent agricultural schools, which may receive State aid equal to one half the cost of maintenance. Smith's Agricultural School at Northampton is the only one in operation. The Montague Agricultural School, after receiving State aid for three years has been closed. By Act of the Legislature in 1911, State aid equal to two-thirds of the salary of a special instructor devoting his entire time to agriculture is given to high schools establishing departments of agriculture of the type recommended by the State board of education in its report on agriculture and industrial education. The Petersham Agricultural High school gives a four year course in Agriculture and now receives State aid under this act. The State Board of Education has appointed an agent to supervise agricultural departments so established. Agriculture is taught in at least 18 high schools and in the State Normal Schools at Bridgewater, Hyannis, and North Adams. A Commission appointed by the State Board of Education to investigate the needs of Agricultural education in the State has made an extensive study and submitted a valuable report, in which they recommend State aid for agricultural departments in existing high schools.

WHAT THE COMMISSION RECOMMENDS FOR CANADA.

SECTION 5: INTERMEDIATE RURAL CLASSES OR SCHOOLS.

In general the training at these schools would prepare pupils for engaging in farming and housekeeping occupations and for admission to the third year of Rural High Schools.

The qualifications for admission should be 13 years of age and over and the completion of the work of the Elementary School or ability to write, read, draw and calculate to the satisfaction of the Principal or Committee on Admission. Some of the classes would be separate for boys and girls. The courses would continue two years of five to seven months each at the school, and the rest of the year at the farm or home according to local conditions.

The kind of work to be done at the school would provide for series of experiences in proper sequence and have regard to the conditions of farming and housekeeping in the locality.

The qualifications of teachers, accommodations and equipment and the classes themselves would be similar, as far as practicable, to those provided for by regulations and courses of study for the agricultural department of Continuation Schools, High Schools and Collegiate Institutes issued by the Department of Education of Ontario for the Session of 1911-12.

Ontario Regulations.

The following extracts set forth the main points to be considered in this regard:—

Qualifications of Teacher: (1) The teacher of Agriculture shall hold the degree of B.S.A. from the University of Toronto, or a certificate of qualification from the Ontario Agricultural College. Such teacher may also take part in the Science work of the school at the discretion of the High or Continuation School Board and of the Principal, and with the approval of the Ministers of Education and Agriculture.

(2) Except when otherwise provided by the Minister of Education, the county representative alone shall teach the agricultural classes under the control of the advisory Agricultural Committee.

Accommodations and Equipment: When rendered necessary by the course of study the following shall be provided:

(1) A suitable laboratory and the equipment necessary to carry out the work as outlined in the course of study.

(2) Experimental grounds, separate from the ordinary grounds, for illustration purposes in the growing of various classes of farm crops and for training in experimental work. The area of the grounds shall be determined by local conditions.

School Agricultural Classes.

8. Pupils at a High or Continuation School centre may take the agricultural classes either alone or in addition to one or more of the other school classes.

9. (1) The courses shall be arranged with a view to meet the needs of the local farming community and shall be selected from the subjoined lists of subjects, with such additions or modifications as may be approved by the Advisory Agricultural Committee and the Minister of Education.

(2) The courses should be prepared by the teacher of agriculture for submission to the Advisory Agricultural Committee and, when approved by it and the Board, should be transmitted promptly to the Minister of Education for his consideration.

10. (1) The minimum length of a school course in agriculture shall be four weeks. Shorter courses for farmers are provided under the authority of the Minister of Agriculture.

(2) The total amount of time to be given each class per week shall be settled by the Advisory Agricultural Committee, after consultation with the teacher of agriculture.

(3) In the construction of his time-table and the management of his school classes, the teacher of agriculture shall be subject to the Principal of the High or Continuation School.

School Departments of Agriculture.

11. (1) A Department of Agriculture may also be provided in a High or Continuation School with a maximum course of two years.

(2) Pupils taking such Agricultural department shall take in addition to the agricultural classes, which also shall be selected from the subjoined list of subjects, the academic subjects which are obligatory upon all High or Continuation School pupils; namely, geography, arithmetic and mensuration, English grammar, writing, reading, English composition, English literature and history, with such suitable modifications and with such additional subjects as may be deemed expedient by the Principal and the parent or guardian of the pupil

(3) Pupils who take the two years' Course of the Agricultural Department herein provided for, and whose competency is attested by the principal of the school and the teacher of agriculture, shall be eligible for entrance to the second year work of the Ontario Agricultural College.

Note.—*It is not expected that agricultural departments, separately organized, can be established for some time. The Advisory Agricultural Committee and the teacher of agriculture should, however, keep constantly in view the desirability of such establishment.*

The list of subjects at these Agricultural Classes is as follows. The detailed elaboration of each subject is omitted from this statement.

(1) Field Husbandry, (2) Animal Husbandry, (3) Dairy Husbandry, (4) Poultry, (5) Horticulture, (6) Forestry, (7) Agricultural Botany, (8) Entomology, (9) Agricultural Physics, (10) Agricultural Chemistry.

The Co-ordination of Subjects.

The work at the Intermediate Rural School building should be co-ordinated in the case of every pupil with some definite, practical work (Farming-Project or Housekeeping-Project) carried out at home or elsewhere. Effort and progress in this home-work should be regarded by the teacher as an integral part of the educational course.

Science subjects should be taught particularly in the relation of their application to rural work, rural problems, and the principles underlying the systems, methods and operations of farming and housekeeping.

On the literary, social and cultural side, special attention should be given to language, literature, history, physical culture, singing and such experiences as make for the enrichment and efficiency of intellectual and social life in rural districts.

In cases where the teacher is not qualified to direct and estimate the progress and values of the work of the pupils in the Farming-Projects or the Housekeeping-Projects, a committee of one, two or three should be appointed to co-operate with the teacher. The District or County Instructors would be competent to counsel on what to do and how to do it in these educational projects. They could assist in co-ordinating the Farming-Projects and the Housekeeping-Projects with the work of the school.

Chief Objects of the Course.

The object of the school would be the preparation for general farming and successful life in a rural community. The course of work should be provided with that in view, and the methods of instruction to be followed should be subordinate to that chief aim. Too often the method of instruction in rural and other schools has been the one which seemed the best adapted to preparing pupils to pass examinations for which the chief qualification has been the possession and exercise of an excellent verbal memory. There should be the maximum of practical work arranged in proper sequence for the development of the pupil and, consistent with that, the use of books. So far as the benefit to the pupil is concerned, this minimum of time on books would likely result in the use of books in such a way as to render the student the maximum of service.

Throughout the whole course, and in all the work and study, due regard should be had to the development of a spirit and habit of good citizenship. That may be best accomplished by the student participating in forms of activity which are part of the social life of the community and of the social and intellectual life of the school as an institution.

CO-ORDINATED AGRICULTURAL EDUCATION.

The Intermediate Rural School would seem to be well suited for carrying out the principles which underlie the plan of co-operative or co-ordinated industrial education. The best known of the co-operative industrial schools are in the State of Massachusetts. Information regarding them is contained in Part III of the Report. The Board of Education there has, in various publications, presented detailed information on Co-operative Agricultural Education. The information published by that body has been freely drawn upon for what appears on that subject in the following part of this Section. The Commission is also indebted to Mr. Rufus W. Stimson, Agent for Agricultural Education of the Mass. State Board of Education, for valuable information obtained from "Conversations" with him, part of which is given under the Report on Smith's Agricultural School and Northampton School of Technology. (See page 317).

Farming-Projects and Study-Projects.

Co-ordinated Agricultural Education is made up of two parts co-ordinated in educational courses for boys and young men from 14 years of age onwards. One part is made up of some definite undertaking to be carried on by the boy at the farm where he lives, the other part is made up of the instruction, study and practical work to be carried on at the school which he attends. The productive work at the farm is called a Farming-Project and the work at the school with the reading, discussions and study at home become the Study-project. The Study-Project is different from the study of subjects as such in the order of the logical presentation common in text-books. The Farming-Project and the Study-Project are arranged to supplement each other.

Objects of Farming-Projects.

The Farming-Project, in a part-time co-ordinated Rural High School or Intermediate Rural School, may be indicated as some definite piece or part of productive or conserving farm work, (1) planned to yield results available in material or money values to the pupil, and (2) carried on within specified limits in such a way as to yield educational results in the pupil by practice in observing, thinking, learning, planning, managing and co-operating with others.

That is to say the Farming-Project, or undertaking to be carried out, should be of a sort requiring systematic study, reasoning, planning and action by the pupil without compulsory direction. It should be arranged for the sake of the undertaking itself and for the sake of the educational benefit to the pupil from the training he would receive thereby. The latter would be the chief end, while the former would be the chief means.

For pupils in rural schools, perhaps more than others, it is wholly beneficial if indeed not entirely necessary that the experiences of practical work and the theoretical instructions which they receive, or studies which they follow, should

come close together in point of time as well as in character of content. It may be taken as a sound principle in education that the main steps in every complete educational experience are observing, thinking, feeling, reasoning or planning and managing towards and into some form of expression. The closer in point of time the steps are taken together, the greater the growth of power, the surer the formation of habits, and the more certain the acquisition of knowledge which will not be forgotten and will be available in every-day life.

The Part-Time Features.

The co-ordinated plan provides, in the main, for the pupil giving continuous attendance at a Rural High School or Intermediate Rural School during about six months of the year, when he can be spared most conveniently and advantageously from the work of the farm, and devoting his time to work on the farm during the remainder of the year.

During the period when the attendance at the school is continuous, it is desirable that some Farming-Project which would not require a large portion of the pupil's time should be carried on.

During the period when the pupil is working continuously on the farm, the Farming-Project, carried on as part of his school course and training, should not be of such a large character as to occupy more than from one-sixth to one quarter of his working time. The remainder of his working time should be available for the general work of the farm as required by his father or other person in charge. The Farming-Project should not be so small as to tempt the boy by its smallness to consider it a negligible part of the actual productive work of the week.

Other subjects to be taken up during the courses would be Agricultural Chemistry, Agricultural Botany, English or French, Mathematics, History, Good Citizenship, Singing and Physical Culture. An effort should be made to relate them as far as practicable to the Farming-Projects and the Project-Studies.

It has been suggested that the division of time in carrying out the School, Home and Farm Co-ordinated method of training might with advantage be as follows:—For the execution of the projects, including work during vacations and other out-of-school hours, 50%; for the related study, 30%; for systematic courses of composition, literature, history, civics, mathematics and other subjects of general culture and good citizenship, the remaining 20%.

The information acquired by the boy in connection with work of this kind would be retained as part of his mental equipment; it would be organized as part of his real knowledge for application, instead of being remembered for only a short time as part of the information which he could merely state in words somewhat similar to those through which he acquired a verbal acquaintance with it. There would be no likelihood of a boy forgetting information which he had acquired from observation, discussions or reading, when he had transmuted it into effort in connection with his Farming-Project, and had realized upon the application of it either through failure or success or partly the one and partly the other.

Variety of Farming-Projects.

The Farming-Project might be growing vegetables for the house or for sale; growing a quarter of an acre of potatoes; growing half an acre of Indian corn; growing seed grain on a hand-selected plot, etc., etc. Or the Farming-Project might be caring for some kind of live-stock, such as a flock of hens; a number of pigs; a number of sheep; three or four cows; two or three horses, etc. Or the Farming-Project might take the form of carrying out some necessary part of farm management or farm work suited to the boy's age and ability. In the care of live stock a record should be made of the amounts and kinds of feed consumed and of the products obtained, as for example, the number of eggs or the quantity of milk.

Arranged Progressively.

The Farming-Projects should be arranged in progressive sequence beginning with the more elementary and simple undertakings. During the first year the Farming-Projects would deal with one or more crops and would be Farming-Projects with plants; during the second year the Farming-Projects might deal with the care of animals and go under the name of Farming-Projects with animals; during the third year more advanced work might be undertaken with plants; and during the fourth year more advanced work might be undertaken with animals. As for example: if during the first year the Farming-Project had to do with the growing of vegetables or cereals, during the third year the Farming-Project might take the form of growing fruits, small or large, or growing a small area of potatoes, of Indian corn, or some other cereal with a view to the improvement of seed or crop by means of selection or some special treatment. During the second year the Farming-Projects with animals might be confined to poultry, pigs or sheep, and during the fourth year they might be concerned chiefly with cows or horses.

There is no good reason why there should not be a continuation of the Farming-Project of any one year during the succeeding year in addition to the Farming-Project which was proper in sequence for that year. However, the chief attention of both the pupil and instructor should be concentrated on the particular Farming-Project for that year. While each year would be complete in itself, there would be advantage to the pupil from following a two or a four year course in succession as arranged by competent authorities.

All Interests Consulted.

The Farming-Project to be carried on by the pupil could be arranged to advantage only after consultation and careful consideration by the parents, the teacher and the pupil. It is desirable and preferable that the Farming-Project should be one which would appeal to the boy's taste and preference and lead to definite revenue or profit from the work done. The interest awakened and kept active in the boy from the latter consideration is a very important factor.

The choice of Farming-Projects will be determined to a certain extent by:—

(1). The attitude of the farmer and the kind of farming which is or can be carried on;

(2). The teacher, the course of study, and the equipment of the school;

(3). Most of all, the pupil himself and his preference or tastes for certain lines of work.

To ensure success it is necessary that there should be a full measure of hearty and sympathetic co-operation between the farmer, the teacher and the boy. That will lead to the boy getting the use of as much of the farm plant as is necessary and being allowed as much of his time as is required to carry through his Farming-Project.

Supervision by Competent Teacher.

It is desirable that the teacher should visit the boy at the farm at least once every month and go over and discuss with him the progress of his Farming-Project. At the same time the teacher should examine and criticise the records of the Farming-Project, which would be kept regularly and systematically. These records should contain a statement of the dates and time spent on the work, the kind of weather, the results observed, the progress of the crop, and the boy's judgment of what should be undertaken the following week. The examination of these records of his intentions for the future, made once a month with the teacher in the light of what actually had been done, would be valuable in developing the habit of exercising good judgment on conditions as they arose. The school should provide blank forms for these records to assist the boy in making them regularly, and in such a form as to be advantageous for his own education and for comparison with other records.

This implies that the instructor or teacher, under whose supervision this work is undertaken and carried on, must be thoroughly competent, in attitude of mind, in knowledge, in practical ability to do and to manage, and in enthusiasm for boys as well as for farming. Such teachers working with from fifty to seventy-five boys each would provide the farmers-that-are-to-be with the best of qualifications for practical farming and rural leadership.

Qualifications of Teachers.

As a rule the teacher or instructor in charge of Co-ordinated Agricultural Education should be a graduate of an Agricultural College. He should have had practical knowledge of and experience in farming operations and farm management such as prevail in the locality. It would be all the better if he had some intimate knowledge of local climatic and marketing conditions. One of his main duties would be to supervise acceptably and efficiently the Farming-Projects of the pupils. Another part of his task, not less difficult, would be to lead the pupil to take up and follow systematic study bearing directly upon the Farming-Project. That would advance his education by a wider and more systematic acquaintance with the agricultural sciences which relate to farming.

The instructor, by his discussions of the Farming-Projects at the home or at the school, should aim to develop in the pupil the power and the habit of clear thinking, of correct and accurate statement, and of planning work to conform to the practice believed by him to be best.

Some of the Advantages.

Where no provision has existed for the carrying on of systematic productive work, in connection with the organized studies at the school, the pupil has been unable to bring the different elements together for his growth in either intelligence or ability. When the Subject-Study has been carried on by itself, unrelated at the time to practical or manipulative work in connection with it, only a few pupils are usually able to profit by the information thus acquired. When both are carried on together and the pupil writes up a record of what he has observed, what he has planned or reasoned, and what he has done, the record itself is both a means toward and an evidence of clear and consecutive thinking on the part of the pupil. The habit of putting ideas into written form is in itself good mental training and also puts the ideas thus expressed better within the command of the pupil.

The progress to be expected in the boy himself would be, in the main, along five lines:

(1). The development of the habit of observing and learning by trying to accomplish a definite useful piece of work in which his interest was keen and continuous.

(2). The development of practical ability from trial and experience in carrying out processes necessary to give effect to his plans; the development of skill in work and of power in managing himself with the least waste of time and strength, and in managing tools, machinery and materials to the greatest advantage.

(3). The formation of the habit of seeking information which could be depended upon to enable him to understand the principles underlying what he was planning to do and trying to do. That would be fostered by discussion with his father, the teacher and others as to how best to accomplish the desired ends, by conferences and discussions with other boys who were carrying on Farming-Projects, and by the Study-Project of reading and study arranged in proper sequence to give him a wider range of knowledge of use to him in the definite Farming-Project which he had in hand.

(4). The establishment of habits of forming reasoned judgments and opinions upon situations, conditions, theories, principles and methods of farm work and management.

(5). The development of will-energy to give effect to his decisions and of desire and ability to co-operate with others in useful undertakings.

SECTION 6: RURAL HIGH SCHOOLS.

The Rural High School, with its four year course, would give a wide basis of general training and knowledge upon which to base further study and work. It is an institution which should give an excellent and suitable education for rural life and should prepare students for admission to an Agricultural College.

The Agricultural College for its part should be occupied chiefly with training men for the higher grades of professional work, their training and status being in every way equal to that of technical engineers.

Moreover, the Rural High School would be different from the County or District Agricultural School in so far as the latter would be a residential school and have only one and two year courses, each complete in itself. The latter would be attended only by pupils of the age of 17 years and over.

The qualification for admission to the Rural High School would be 13 years of age and over and the completion of the work of the Elementary School, or ability to read, write, draw and calculate to the satisfaction of the Principal or a Committee on Admission. Some of the classes would be separate for boys and girls.

The course would be four years. During the first two years the work to be done would be similar to that in the Intermediate Rural School with the difference that the work at the High School might continue longer each year.

Science subjects should be taught particularly in the relation of their application to rural work, rural problems and the principles underlying the systems, methods and operations of farming and housekeeping.

On the literary social and cultural side, special attention should be given to language, literature, history, physical culture, singing and such experiences as make for the enrichment and efficiency of intellectual and social life in rural districts.

In general the training at this school would prepare pupils for engaging in rural occupations and housekeeping and for admission to Agricultural, Housekeeping and Arts Colleges.

In cases where the teacher is not qualified to direct and estimate the progress and values of the work of the pupils in the Farming-Projects or the Housekeeping-Projects, a committee of one, two or three should be appointed to co-operate with the teacher. The District or County Instructors or Supervisors would be competent to counsel on what to do and how to do it in these educational projects. They could assist in co-ordinating the Farming-Projects and the Housekeeping-Projects with the work at the school.

The qualifications for the teachers would be similar to those described under the Intermediate Rural Schools at page 336.)

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SECTION 7: RESIDENT OR TRAVELLINC INSTRUCTORS AND INSTRUCTRESSES.

A: INSTRUCTORS FOR FARMING.

The employment of District Agricultural Representatives has become general in the Province of Ontario, and four areas in the Province of Quebec are served by the Macdonald College District Instructors. That work has proven itself to be eminently useful and acceptable to the farming communities. In the opinion of the Commission similar provision should be made throughout Canada as soon as competent men and women are available for the positions. Since the work reported upon at length in connection with the Province of Ontario and Ireland includes most of the good features found elsewhere, it is not thought necessary to report upon itinerant instruction in detail as examined in other places.

Organization in England.

The *Rural Education Conference* is a body which was constituted in England by Minutes of the Presidents of the Board of Agriculture and Fisheries and of the Board of Education, to consider all questions regarding rural education which might be submitted to them by either Department. On the 1st December 1910 it submitted a report on County Staffs of Instructors in Agricultural subjects, which contains information of value to Local Rural Development Boards or other authorities in Canada in charge of the development of agriculture within county areas. In England many counties are associated with some Agricultural College or other higher institution of education as a centre. The report says in part:

10. Any County Council not associated with an efficient centre which finds itself unable or unwilling to establish a minimum Staff of its own should associate itself with the Council of an adjoining county.

The minimum Staff should be made up as follows:—

(*a*) *Agricultural Organiser and Adviser*, who should, as a rule, supervise the agricultural and horticultural work done by the county, and act as secretaty to the Agricultural Education Committee or Sub-Committee. He should be in close touch with the Head of any Centre with which the county is associated. He should (so far as his other duties may permit) give some instruction himself, but as a rule he would require competent instructors to assist him.

His main functions would be to get into touch with farmers and other agriculturists, and for this purpose to visit local markets and shows and farmers' clubs as well as individual farms and small holdings. He should also enlist the sympathy and help of agricultural associations. He would discuss, and advise agriculturists on, such questions as diseases in crops and animals, manures, cropping, insect pests, &c. He would distribute leaflets or pamphlets relating to rural work (such as those published by the Board of Agriculture), explain them and possibly make them a basis of discussion. He would organise and supervise illustrative experiments and demonstration plots. He would organise classes for instruction in farm labour subjects and prize competitions in connection with such subjects as hedging, ditching, thatching, &c.

After becoming thoroughly acquainted with the county, he would advise the Committee as to the establishment of permanent centres for agricultural instruction, such as Farm Institutes, Winter Schools, &c.

(*b*) *Horticultural Instructor*, who should give courses of instruction at approved centres, carry out demonstrations on approved horticultural practice, give advice to small holders, allotment holders, cottagers, and others, He should have special charge of the work connected with school gardens and such nature study as may be connected with them. In counties in which Horticulture is of special importance it may be desirable that the Horticultural Instructor should be independent of the Agricultural Organiser. He should be in touch with any Centre of Horticultural Instruction with which the county is associated, and might, by arrangement, give some of the instruction therein.

(*c*) In most counties a *Dairying Instructor* will also be required, who should conduct a fixed or migratory dairy school and give advice when required to farmers and others in dairy practice. In many counties separate instructors would be required to give instruction in the different branches of the dairy industry.

11. This *minimum* Staff would require to be supplemented by—

(*a*) Competent scientific Investigators and Analysts, who would ordinarily be supplied by the centre with which the county is associated or from some University or Agricultural College.

(*b*) Instructors in special branches of industry, *e.g.* Farriery and Veterinary Hygiene, Poultry and Bee-keeping, Cider-making, Hop-growing and such manual processes as Hedging, Thatching, Sheep-shearing, &c.

These practical Instructors would in most cases be regular members of the staff of the larger, or combined, counties, but in other cases (*e.g.*, manual processes) local experts might more conveniently be employed as required.

(*c*) Instructor in Forestry, who should be supplied from one of the recognised Forestry Centres.

(*d*) Organisers and Instructors in the Economics of Agriculture, *e.g.* Co-operation and Credit Banks for occupiers of land, the grading and marketing of produce, insurance of stock, &c. These would ordinarily be required to cover larger areas than counties, and might be supplied through a central body, such as the Agricultural Organisation Society, subsidised by the Government or by the County Councils employing the Instructors.

Although perhaps not strictly within the terms of our reference, we think it of vital importance that the Agricultural Staff of a county should work under a special committee or sub-committee of the County Council in accordance with the recommendation of the Departmental Committee on Agricultural Education as contained in paragraph 117 of their report.

The paragraph runs as follows:—

"Each county may be left to adopt the system best suited to its own requirements, but the Committee would lay stress on the expediency of there being in every county a special committee, or its equivalent, to organize and supervise Agricultural Education. It is moreover essential that in order to gain the confidence of the farming classes any such special committee should include a large proportion of members engaged, or directly interested, in agriculture or its allied industries."

The Example of Lancashire.

The following is a statement of the staff actually provided for the county of Lancashire, in which mixed farming is followed:—

Area.	Population.	Number of Agricultural Holdings.	
		Owned or mainly Owned.	Rented or mainly Rented.
1,089,255 acres.....	1,751,449	1,841	17,718

Permanent County Staff:—

1. Organiser or Secretary of Agriculture, Horticulture, and Lecturer in Agriculture.
†2. Lecturer in Agriculture.
†3. Lecturer in Agriculture and Bacteriology.
4. Lecturer and Instructor in Horticulture..
5. Instructress in Dairying (at County Dairy School).
6. Assistant Instructress in Dairying (at County Dairy School).
7. Migratory Instructress in Dairying.
8. Migratory Instructor in Cheese-making (in season only).
9. Instructress in Poultry-keeping (at County Poultry School), also Migratory Instructress.
10. Assistant Instructress (at County Poultry School).
11. Migratory Milk-tester.

Staff giving part-time to Work:—

†1. Lecturer in Chemistry.
†2. Lecturer in Agricultural Chemistry.
†3. Lecturer in Botany and Geology.
†4. Lecturers in Veterinary Science.
†5. Lecturer in Engineering and Mechanics.
†6. Lecturer in Physics.
†7. Lecturer in Mathemathics.
†8. Lecturer in English.
†9. Lecturer in Book-keeping.
†10. Instructor in Drawing.
†11. Instructor in Woodwork.
12. Instructor in Bee-keeping.

Cost Trifling Compared with Benefit.

In the memorandum of the English Board of Education, published in 1911, the experience of a medium sized county is cited, showing that work similar to what has been indicated, but not so complete, can be carried on quite effectively there for a total annual expenditure of $12,500. With the provision of a farm school it is estimated that a total annual expenditure of al out $15,000 would be required, apart from the capital charges.

The same memorandum says:—"Wherever such work has been effectively done, farmers declare that the expenditure is trifling compared with the benefit to the agricultural community."

Lessons from Belgium.

Particularly fruitful work has been done by itinerant instructors in France and Belgium. The report of Mr. R. B. Greig to the Board of Education in England in 1912 says:—

> The State Agronomist or itinerant agricultural instructor is generally admitted to be the chief cause of the wonderful improvement which has taken place in Belgian agriculture during the last quarter of a century.. The results of his instruction can be measured in various ways, and quite definitely by the Agricultural statistics, which show that Belgian farms produce £10,000,000 more annually than they did 25 years ago at a cost for every kind of agricultural education of not more than £40,000 a year. What is now the densest population in Europe is almost supported by the product of its own farms, which yield an average of £20 per annum per acre as compared with less than half from British land.
>
> The State Agronomists, who are stationed, one or more, in every Commune, met at first with some opposition and much apathy. For the first few years they delivered single lectures at any centre likely to produce an audience, but as interest increased they developed their lectures into courses, and now they base their instruction on ten groups of subjects from which a course of fifteen lectures extending over the winter months is selected.
>
> The groups are:
>
> (1) General conceptions ofAgriculture.
> (2) The rational feeding of cattle.

†Forming the Staff of the Agricultural Department of the Harris Institute, Preston.

(3) Zoo-technique and farm hygiene.
(4) The rational treatment of milk, butter and cheese.
(5) Agricultural book-keeping and accounts.
(6) The raising of poultry.
(7) Rural Law.
(8) Elementary ideas of rural economy.
(9) Co-operation and Insurance.
(10) Agricultural hydraulics.

A village selects a course from these groups and the State Agronomist arranges for the instruction, much of which must be supplied by specialists. As a rule a number of farmers, chemists, managers of creameries, and accountants who are qualified by education and experience to instruct in their own specialities, are employed for part of the course and paid a fee for each lecture. A State Agronomist may thus have ten or fifteen colleagues under his direction and supervision. A somewhat similar procedure has been tried successfully in Canada. The lines indicated are those on which some English counties are now working, with this important difference, that, as a rule, there is no continuous course of instruction in any one village throughout the winter. The result of all this mental activity in Belgium is a rapid increase in rural prosperity, shown not only by the growth of the national agricultural income, but by the numerous co-operative societies (some of which contain 50,000 members), stock insurance associations, credit banks and farmers' creameries.

Duties of District Representatives in Ontario.

This information regarding Belgium was cited chiefly to illustrate the fact that the work is organized and that a State Agronomist stationed in a single commune may have 10 or 15 colleagues under his direction and supervision. That applies also to a County Organiser and Instructor in England.

Dr. C. C. James, at that time Deputy Minister of Agriculture for the Province of Ontario, presented terse information on this matter before the Commission of Conservation at its annual meeting, January 1911. He reports in a summary the work undertaken by the District Representative in the county of Dundas, Ont., as follows:—

1. Making the personal acquaintance of as many citizens of my district as possible and the revealing of myself to them that they may have confidence in me.
2. Advisory work from office, personal and by correspondence.
3. Three months' Short Course for boys in Collegiate Institute.
4. Organizing and conducting of 3-day Short Courses (5 Short Courses, 1 Fruit Institute).
5. Organizing and supervision of Farmers' Clubs.
6. Assistance in conducting excursions to places of learning—2 to Macdonald College during 1910.
7. Preparatory work leading up to organization of Horticultural Societies.
8. The interesting of Agricultural Societies and farmers in StandingField Crop Competitions.
9. Distribution to good farmers of seed grain from prize-winning fields in Field Crop Competition of 1909.
10. Demonstrations (three) in spraying of mustard.
11. Making of drainage surveys for farmers. Drainage demonstrations.
12. Demonstrations of value of underdrainage by draining of low-lying portion of school grounds, 6 acres.
13. Conducting of demonstration plots on school grounds. Plots 3 acres in extent.
14. Conducting of fertilizer experiments on 3 different farms.
15. Conducting of stock judging competitions for boys at fall fair—4 in all.
16. Exhibit at County Fair, Morrisburg:—Insects, plant diseases, weeds, products of sprayed orchards, spraying materials, apparatus,etc., produce of Demonstration Plots, distribution of bulletins. etc.
17. In 1909, during fair, actual drainage work going on. Taking of levels, grading, etc. demonstrated.
18. Demonstration of good orchard culture by personal (assistant and myself) care of 4 orchards; constant supervision and direction of care of another.

Different kinds of work are undertaken by the District Representatives in different areas to meet local conditions and local needs. The duties of the

District Representative are as various as the conditions of rural life in the place. At one time the Representative is required to give one or more lectures, then to carry on practical demonstrations, and again to offer practical advice on some particular farming problem. It does not seem feasible for one individual to carry on these multitudinous duties satisfactorily and effectively, particularly as in each division more and more will be expected and more and more is required.

Outline of Work for a County.

The matters of first importance to be provided for in Canada at the present time are:—

(1) Visits of inspection and instruction and advice to the individual farmers on their own places.

(2) Holding field meetings with farmers in connection with field crops, fruit culture, live stock, etc.

(3) Interesting the rural teachers in Rural Elementary Education so conducted as to serve agricultural and rural life.

(4) Arranging for and taking part in courses of instruction in Elementary Agriculture and School Gardening for rural teachers at convenient centres.

(5) Arranging annual gatherings and exhibitions to illustrate the year's work and progress in agricultural education.

(6) Arranging for short courses of from two to four days' duration at convenient centres throughout the county or district.

(7) Arranging for longer courses of systematic instruction during four months of winter. These may take the form of the Irish short courses, being held two half days a week at each place, classes at three centres being carried on each week.

(8) Arranging and giving lectures to Farmers' Clubs, Farmers' Institutes and other local organizations.

(9) Advising by correspondence and reporting on specimens of insect pests, weeds, soils, etc., sent in for examination.

(10) Distributing bulletins and other printed matter from the Departments of Agriculture and Education.

In general these Instructors would carry on work similar to some of that undertaken at present by District Representatives in Ontario and Quebec. It would be extended, according to the conditions of the districts, along the following lines:—

(*a*) They (the Instructors) should act in the capacity of co-ordinators between the school work and the Farming-Projects carried on at home by pupils attending the Intermediate Rural Schools and the Rural High School;

(*b*) They should arrange for short courses of instruction for young men who do not attend the Intermediate Rural School or the Rural High School.

Such courses might be given at one place during two half days in the week. That plan would enable the District Travelling Instructor to conduct one course at each of three centres concurrently.

The courses should be arranged in progressive sequence, and a course of reading should be provided in connection with each course.

(*c*) They (the Instructors) should provide systematic short demonstration courses in soils, crops, live stock, farm machinery, etc., etc., for the adult farming population.

(*d*) As soon as practicable they should be associated with the work of a Neighborhood Improvement Association and an Illustration Farm for the locality, similar to those arranged for by the Committee on Lands of the Commission of Conservation.

(*e*) As soon as practicable, they should be associated with the short courses as mentioned under Section 8: County or District Agricultural and Housekeeping Schools.

Adults and Young Pupils.

It is necessary to distinguish clearly and continuously between the kind of instruction and demonstration to be provided for adult pupils who are actually engaged in farming work, and the kind of educational help to be given to pupils at the Intermediate Rural Schools and the Rural High Schools.

When the adult pupils meet the instructor they have had considerable experience in the doing of things, and know the "How" of farming operations. They need instruction (information and guidance) to enable them to understand the "Why" of farming operations, and suggestions (explanations and information) concerning methods of management and the principles that underlie systems and methods of farming, such as preserving fertility of soil, selection of seeds, controlling weeds, rotation of crops, keeping live stock, etc.

On the other hand it is desirable that the Instructor should let the young pupils work out problems in Farming-Projects as part of the course (or series of experiences arranged in proper sequence). His main helpfulness would come from giving the work to be undertaken as a Farming-Project a didactic or educational setting, from directing the sequence in which different Farming-Projects should be taken up, and indicating sources whence the necessary information might be obtained. It is better in the case of young pupils that they should dig it out for themselves than that they should have full information presented in a pre-digested state in a lesson package.

One of the District Instructors might become a County Superintendent, supervising and correlating all the Industrial Training and Technical Education for development work within a County or larger area. After the first year or two more than one Instructor would be required in an ordinary County area.

B: INSTRUCTRESSES FOR HOUSEKEEPING.

These might carry on work, for the Housekeeping interests of the district, similar to that undertaken by the Resident or Travelling District Instructors for Farming.

1. As a beginning, a Travelling Instructress in Housekeeping might meet a class of women arranged for by a Women's Institute, or other similar organization in the locality, one half day per week for a term of 20 weeks.

The other half of the same day the Travelling Instructress might carry on work with the girls and teacher in the school (Elementary, Intermediate or High) of the locality.

2. They should be connected, when necessary, in the capacity of co-ordinators, with the Housekeeping-Projects carried on at home by pupils attending the Intermediate Rural Schools and the Rural High School.

3. These Instructresses should provide demonstration lectures in Cooking and Housekeeping work, chiefly as a means of directing public attention towards channels along which systematic educational work could be conducted.

4. As soon as practicable, they should be associated with the Short Courses of a County or District Housekeeping School in the country or a Middle Housekeeping School in a town.

As soon as practicable, they should be associated with the work of Neighborhood Improvement Associations similar to those arranged for by the Committee on Lands of the Commission of Conservation.

It is important to bear in mind that there is an essential and fundamental difference between the kind of instruction and demonstration suitable for the women and that which would be advantageous to the girls in school. Practically what is said under "Adults and Young Pupils" on page 350 applies here.

After the first year or two, more than one Instructress would be required for an ordinary County area.

This matter is discussed more fully in the Chapter on Classes (or Schools) for Housekeeping.

SECTION 8: COUNTY OR DISTRICT AGRICULTURAL AND HOUSEKEEPING SCHOOLS.

These schools would serve the rural population to some extent as the industrial population of the towns would be served by the Middle Technical Schools for apprentices, skilled workmen and foremen and superintendents.

Courses: One or two years and also short courses of from one to three months for special subjects and industries. The courses would provide for a series of experiences in proper sequence, arranged to enable the student to acquire, (1) a wider knowledge of the principles underlying the systems, methods, operations and processes of their special occupation; (2) a wider range of knowledge and skill in the actual management of soils, crops, live stock products and homes, in the use of machines, tools and utensils, and in the making of things.

It is necessary to distinguish between the kind of instruction and demonstration for those who are practically adult pupils, and who have had considerable experience and practical work, and the kind of educational help to be given to pupils at Intermediate Rural and Rural High Schools. When the adult pupils

meet the Instructor they have had considerable experience in the doing of things and know the "How" of farming operations. They need instruction, information and guidance to enable them to understand the "Why" of farming operations, and require suggestions, explanations and information concerning methods of management and the principles that underlie systems and methods of farming, such as preserving fertility of soil, selection of seeds, controlling weeds, rotation of crops, keeping live-stock, etc.

On the other hand it is desirable that the young people at the Intermediate Rural and Rural High Schools should work out problems in Farming-Projects as part of the course. To them the teacher's main helpfulness would come from giving the work to be undertaken as a Farming-Project a didactic or educational setting, directing the sequence in which different Farming-Projects should be taken up, and indicating whence the necessary information might be obtained. It is better in the case of young pupils that they should dig it out for themselves than that they should have full information presented in a pre-digested state in a lesson package.

These County or District Agricultural Schools would be residential schools, and wherever it was practicable arrangements might be made to let the Young People's Social Service Schools occupy the premises at such times of the year as they would not be in use for the regular courses.

These schools would be suitable places at which to provide short courses and special courses in such branches as Dairying, Fruit, Vegetable and Flower Growing, Poultry-keeping, Bee-keeping, etc.

The classes and courses at these County or District Agricultural Schools would be much like the two year courses given at the present time at the Agricultural Colleges in Canada. An essential difference would be that the courses would not be framed for the purpose of preparing students to go on with the College education in agriculture, but would be specifically directed to qualifying those who took them to carry on the work of farming. (See Reports on County Schools at Menomonie, Wis. and Menominee, Mich. pages 324 and 328).

SECTION 9: YOUNG PEOPLE'S SOCIAL SERVICE SCHOOLS.

The People's High Schools of Denmark have supplemented the general education of the Elementary Schools. Their object has been to develop social and patriotic qualities of a high order in individuals and communities. The Agricultural Schools grew out of them, and they help to increase the attendance at all the Vocational Schools. They are regarded by the Danes themselves as among the chief factors in conserving and promoting national prosperity and strength.

They are schools in which the pupils are in residence. The young men attend during five months in winter; the young women during three months in summer.

The schools, in most cases, are owned and carried on by private individuals under the supervision of the State. They receive small subsidies from the Government. They charge fees. A large number of Scholarships provided by the State are available to young men and women. These Scholarships provide about one half the total cost to a student for fees, which include board, living accommodation, etc. Ordinarily as many as one half of the pupils attending a school may be there on Scholarships.

There are about 70 People's High Schools in Denmark. It is estimated that about 7,000 young people attend them annually. That is equal to about one in every five of all the young people who come to 18 years of age annually in the rural population.

It would appear to be highly desirable that schools of this type should be established for the rural population in Canada. A beginning might be made by providing courses for young women at a few existing institutions, such as Agricultural Colleges, or other residential schools or colleges during summer vacation periods.

They might also be organized in connection with County or District Agricultural and Housekeeping Schools as under Division V.

To qualify for admission the candidates should be between 18 and 25 years of age and have educational attainment and character to the satisfaction of the Principal or a Committee on Admission.

The courses would be from three to five months, and the young men and young women would not be in residence at the same time.

The courses should be arranged and given for the purpose of cultivating and developing a sense of responsibility for life and its opportunities, social efficiency, public spirit and devotion to the country.

Emphasis should be laid upon Canadian and British History, Literature, Ability to use Books, Singing, Physical Culture and Social Service in the community. In this connection see extended Report on People's High Schools of Denmark in Part III).

SECTION 10: SCHOOLS FOR AGRICULTURAL APPRENTICES.

Such schools on the Continent of Europe, in Ireland, and to a limited extent in England, pay particular attention to the training of pupils in manual dexterity and familiarity with the ordinary operations of farm work, such as ploughing, seeding, stacking, threshing, etc. The report on the Agricultural Apprentices' School at Clonakilty, in Ireland, gives as full information as may be necessary in this connection.

Only in the portions of Canada where settlement is comparatively new, are Farm Schools for the purpose of teaching the ordinary farming operations necessary. In the older districts, before a pupil is admitted to the County or District Agricultural School, he should have spent long enough at practical farm work to have learned all the operations thoroughly. At the same time it is

to be remembered that the actual practice of farm work in many parts of Canada is greatly below the standard of ordinary practice in England, Scotland, Germany, France and Denmark. The remedy for this state of affairs can only be gradual and comparatively slow. It may perhaps best be brought about through the co-ordinated Farming-Projects in connection with the Intermediate Rural Schools and the Rural High Schools. The influence and instruction of the Travelling Instructors would doubtless also have a marked effect on the skill and effectiveness with which the farm work is done.

Farm Schools.

The proper place at which to learn farming is a farm, managed as a business concern to provide a living and competence for the owner or worker. Farm Schools, where young men would learn how to do the work of farming and the methods of management, would be advantageous for people who have come to Canada from other countries without any experience of farm work under conditions similar to those of Canada or with implements and tools like those used in Canada. Particularly in the districts which are being settled by those who come from countries whose climatic or soil conditions and farming methods are different from those of Canada, it would be advantageous if a farm such as an "Illustration Farm" could be designated to receive such people for short courses, lasting from a week at a time up to a longer period, according to their needs.

The Commission recommends for such districts an Illustration Farm on a plan somewhat similar to those arranged for by the Committee on Lands of the Commission of Conservation, It might be the headquarters of a Travelling Instructor. To supplement the information and advice which such an Instructor could give on their own farms, he could meet the newcomers in groups from time to time at the Illustration Farm to give illustration and demonstration of the operations and methods of farming suitable to the district and to the resources of those who are settling in it. The waste of time which often occurs, the loss of crop which sometimes ensues, and the disappointment for a period of one or more years which frequently comes to the beginner, might be in a large measure prevented. Whatever would accomplish that would be of economic advantage to the whole community, not merely from the immediate saving and prevention of loss, but from the ability, knowledge and spirit resultant in these new settlers. The benefit would be to the individuals themselves, to their community, and to the business and transportation interests.

SECTION 11: AGRICULTURAL COLLEGES.

The Agricultural Colleges in Europe do not differ from Canadian Agricultural Colleges in such a way as to make it necessary or useful to give outlines of their courses in detail. One outstanding difference inheres in the fact that the Canadian Agricultural Colleges have professedly aimed to educate young men

to go back to the farms to carry on farming there. They claim credit for the extent to which they have accomplished that. On the other hand, the Agricultural Colleges of Europe definitely profess to train young men for professional service in connection with agricultural and rural life.

It appears to the Commission that the time has arrived when a similar aim and course should be followed at the Agricultural Colleges in Canada. The need for capable and thoroughly trained men is already so great that the present capacity of the Agricultural Colleges would not suffice to meet it for several years to come.

TO TRAIN PUBLIC SERVANTS.

To meet that need, it appears to the Commission that the Agricultural Colleges maintained by public funds should devote themselves chiefly to the education of those who would serve the rural community. Under present conditions it does not seem probable that any large percentage of the working farmers can be spared from their occupations or can have opportunity to take a full course at an Agricultural College. The helpfulness of the Agricultural College can be carried to every community through the labors, knowledge and character of men and women who are trained at the College for professional service; and it can best serve the rural population through the education of such men and women.

The training and the education of the practical working farmer should be provided for in the Elementary School, the Intermediate Rural Classes, the Rural High School, the County Agricultural School, and by short courses at district centres, all of which should be easily accessible to him. The advantage to the practical working farmer who can take a full course at an Agricultural College will be largely of a personal character for his own benefit.

This is all in line with the systems of Industrial and Technical Education for industrial and technical workers in Germany and other countries. The working mechanic and also the foreman, in the workshop or factory, receive their education at the Continuation Schools, and at the Lower and Middle Technical Schools. Only those who are to become foremost leaders and directors of industry in a large way, and those who are to teach, take the full course in a Technical College.

This is also in accord with the methods followed in Denmark and Germany for the education of farmers and rural communities.

Training Agricultural Teachers in Germany.

In Germany the training of teachers is recognized as essential for every order of instruction. The teacher of any practical branch must add to his professional or trade experience training in the art of teaching before he can secure recognition. The staff of itinerant lecturers maintained by the Agricultural Department in the interests of the farmers must have in addition to the usual qualifications, ability as popular speakers and readiness in discussion. The official regulations in regard to the preparation of teachers of agriculture are very explicit.

There are in Prussia two well known pedagogical seminaries for training teachers for this work—one at Hildesheim and the other at Weilburg. The latest official regulations on the subject provide that after April 1, 1911 no one shall be appointed as Professor of Agriculture, even in the Elementary Schools of Agriculture receiving State grants, unless he possesses certificates proving (1) that he has at least the general education required for those who are admitted to the military service of one year; (2) that he has had four years of practical work in agriculture under proper supervision; (3) that he has pursued for three years the higher course in agricultural studies in a University or in a Technical High School, and that he has passed the examination for a Professor of Agriculture; (4) that he has successfully followed a professional course in a Normal School.

Training Experts and Leaders in Ireland.

Frequent reference has been made to the policy and methods followed in Ireland. The plan of the Irish Department of Agriculture and Technical Instruction for training leaders is recommended to Canadian authorities. The Irish Department had the advantage of being created after a thorough and intimate study of the systems of the leading European countries. It was organized in such a way as to enable it to give effect to the best that had been learned from these countries. After some 12 years of experience, with a reasonably free hand given to eminently capable, highly trained, public-spirited and unselfish officials in developing its work, what is found in the Department in Ireland now includes much of the best which the Commission found in Europe. It is not meant by this to intimate, or give rise to the inference, that the educational attainments of the Irish people, in that brief period, bring them abreast of those in Germany, France and Denmark from whom they learned the lessons which they have put to such good account.

The plan of the Department whereby men are trained up through the Albert Agricultural College at Glasnevin and the Royal College of Science at Dublin is providing a supply of competent experts. The courses for women through the Munster Institute at Cork and the Central School of Domestic Economy at St. Kevin's Park, Dublin, furnish trained women teachers.

The Training of Instructors and Teachers in England.

In England the authorities are active in planning for and providing for the further preparation of teachers of agricultural subjects. An official document of the Board of Education from which quotations have already been made says:

(i) *Agricultural Instructors.*

70. It is obvious that the provision of the scheme of rural education set out in the foregoing chapters depends upon an adequate supply of properly prepared teachers. First of all it is necessary to consider the supply of highly educated men who can act as the expert staffs of the Agricultural Institutes and as instructors in the Farm Schools. The difficulty of getting good men

for such posts is a very real one. This is partly because the salaries offered by County Education Authorities are too low to induce men to prepare themselves for county work or to accept county posts when better pay is offered for Indian and Colonial appointments, and partly because the means of preparation available are not in all cases suitable for the purpose. The preparation for the more important posts should be obtained at an Agricultural College or a University, and should include a thorough grounding in the sciences underlying agriculture, practical experience in the branch of agriculture which is to be followed, and practical instruction in science as applied to that branch of agriculture. With the recognition of nearly all the Agricultural Colleges as University departments, and with an increase in their financial resources, there is reason to believe that a sufficient supply of adequately prepared men can in future be provided, and it now rests with the County Education Authorities (1) to offer facilities to promising students by scholarships to prepare themselves as experts and (2) by offering adequate salaries to hold out prospects of sufficiently remunerative employment.

(ii) *Rural Science Masters.*

71. If work * * * is to be developed in rural Secondary Schools, science masters will be needed who possess a practical knowledge of biology in addition to chemistry and physics, together with such a knowledge of agriculture or horticulture as will enable them to give a rural bias to their teaching. Suitable teachers have been secured in several schools by the appointment of men who have taken their science course in the Agricultural Department of a University. In other schools, science masters who possessed no agricultural knowledge have attended vacation courses at the Agricultural Departments, such as the course held at Cambridge during the summer of 1909, nearly half of the students of which were teachers in Secondary Schools. It is to be hoped, on the one hand, that the Agricultural Departments, remembering that they must depend largely upon the rural Secondary Schools for a supply of well prepared students, will provide both appropriate courses for intending science masters and summer courses for existing science masters, and, on the other hand, that Local Education Authorities and Governors of rural Secondary Schools will provide facilities and encouragement to science masters to take advantage of these courses.

Findings of the Rural Education Conference.

More recently the Rural Education Conference issued a Report on the Qualification of Teachers of Rural Subjects. The chief findings of the Conference are in the concluding paragraph of the Report as follows:—

13. In our opinion there are several ways in which the difficulty in connection with increasing the supply of teachers properly qualified to give instruction in rural schools might gradually be overcome:—

(1) The Training College course might be extended for all students to at any rate three years so as to allow of their acquiring the special knowledge necessary in the third year. This third year need not necessarily be consecutive with the first two years.

(2) Special courses in rural subjects might be included in the curriculum for bursars and other intending teachers at rural Secondary Schools. In many cases such courses would be equally beneficial to all the pupils in the school.

(3) Local Education Authorities might be encouraged to provide systematic courses of instruction of a suitable character through which as many as possible of the teachers in rural Elementary Schools might be passed. Such courses would be held most conveniently, under the supervision of the county staff teachers referred to in the first Report of the Conference, on Saturdays, lasting over a period of two years, and in conjunction with these Saturday courses, further courses of two or three months' duration might be arranged at an Agricultural or Horticultural College or Farm School, the places of the teachers being filled temporarily while they were undergoing this further training.

(4) The pay of teachers in rural schools might be brought up to a level more nearly approaching that which obtains in the towns, and greater opportunities of promotion than they at present enjoy might be given to them. If this were not feasible, special remuneration should be given by Local Education Authorities to specially qualified rural teachers.

14. From the evidence which we have received we are convinced that it is not at present possible for county Education Authorities generally to undertake the responsibilities referred to above to any large extent for financial reasons, and because of the feeling prevalent among ratepayers that the training of teachers is a national question rather than one for each county to undertake for itself.

We therefore recommend—

(1) That the length of the ordinary Training College course should be extended by one year, during which teachers would be able to specialize. This third year need not necessarily be consecutive with the first two years, and those teachers who desire to take up rural subjects during this period might be allowed to do so at University or Agricultural or Horticultural Colleges or Farm Institutes.

(2) That all county Local Education Authorities should be required to provide for their existing teachers, or for such future teachers as have not attended a Training College Evening, Saturday or Vacation classes, and, in connection with these classes, courses of two or three months' duration at an Agricultural or Horticultural College or Farm Institute where the teachers would receive free instruction and their ordinary pay.

(3) That Local Education Authorities should encourage rural teachers, both head teachers and assistants, by assimilating their pay more nearly to that obtaining in the towns.

(4) That the curriculum of rural Secondary Schools should be modified to include special courses in rural subjects for bursars and other intending rural teachers.

(5) That increased grants should be given by the Treasury to county Local Educational Authorities to enable them to carry out the suggestions which we have made in (2) and (3) of this paragraph.

Preparation of Teachers of Agriculture in Agricultural Colleges in the United States.

The Commissioner of Education in his Report for 1911 says:—

The introduction of instruction in agriculture into the school curriculum has created a greater demand for teachers with special training for the work than can at present be supplied. While agriculture as a high-school science is being rapidly rounded into pedagogical form, it is yet so far in the experimental stage of its development that teachers with special training are essential. Probably no factor has had more influence in retarding the introduction of instruction in this subject into the public schools than the lack of instructors properly qualified with training in both pedagogy and in technical and practical agriculture.

The majority of such teachers must be supplied by the State colleges of agriculture and mechanic arts. To encourage these institutions to prepare special teachers of agriculture Congress in the Nelson amendment to the appropriation bill for the Department of Agriculture approved March 4, 1907, providing further aid to the colleges of agriculture and mechanic arts established under the provisions of the land-grant Act of 1862 and receiving the benefits of the Act of August 30, 1890, added the proviso "that said colleges may use a portion of this money for providing courses for the special preparation of instructors for teaching the elements of agriculture and the mechanic arts." Under this Act each State is now receiving annually for the benefit of its college of agriculture and mechanic arts the sum of $25,000.

"A special inquiry was made of these institutions by the Bureau of Education during the past summer to determine what each is doing to prepare special teachers of agriculture. There are 50 of these colleges, not including the separate institutions for colored students; 12 of them are offering no special courses for students preparing to teach, although many of their graduates with no preparation but their general college course and technical agriculture courses have become instructors in agriculture in secondary schools; 3 of these offer summer-school courses in agriculture for elementary teachers. 13 others, having already a department or school of education when the Act of Congress was passed, now allow students in the agricultural courses to elect certain courses in education. 10 others have added courses in psychology and general education, and 13 have added departments of agricultural education, which give courses in methods of teaching agriculture and in school agriculture as well as in general pedagogy. 9 offer special one or two year courses for teachers of agriculture, and 30 conduct summer schools offering courses in agriculture for elementary teachers. The departments of agricultural education in many cases are giving special aid to instructors in public schools teaching agriculture, and are also giving special instruction in agricultural pedagogy and agriculture for teachers in summer schools. Among the 17 institutions for colored students, Hampton Institute (Virginia) is the only one preparing special teachers of agriculture; 8 others require pupils in their normal course to take an elementary course in agriculture.

An Extension in Ontario.

In August, 1912, a circular was issued by the Department of Education of Ontario, setting forth the recent provision made in that Province to increase

the number of persons competent to serve as Specialists in Science and Agriculture. The first three paragraphs are as follows:—

COURSES AND EXAMINATIONS FOR THE DEGREE OF B.SC. (AGR.) AND SPECIALISTS' CERTIFICATES IN SCIENCE AND AGRICULTURE.

Under the present scheme for the advancement of Agricultural Education, the County Representative of the Department of Agriculture is expected to teach Agriculture in the High and Continuation Schools and the Collegiate Institutes. The latter function, however, he is usually unable to perform satisfactorily, partly owing to the pressure and importance of his duties as representative, and partly to the difficulties connected with arranging for his classes in the time tables of the Schools. The experience of five years has shown that in order to secure for the subject of agriculture its due share of attention, the teacher of agriculture must be a regular member of the staff. For some years at any rate not all the time of such teacher would be taken up with classes in agriculture, and accordingly, at the request of the Minister of Education, the Universities of Toronto, Queen's and McMaster have established the new degree of Bachelor of Science in Agriculture [B.Sc. (Agr.)] the course for which covers four years, the first two being taken at the Universities and the last two at the Ontario Agricultural College, Guelph. These courses provide a good general education as well as a special knowledge of both science and agriculture. In order, also, to increase their knowledge of practical agriculture, candidates for the degree will be expected to work during the summer vacation between the third and fourth year's course, either on the College farm or on some other farm in the Province of Ontario which, in the opinion of the President of the College, is well managed. The conditions under which this work is to be done may be ascertained from the President. An outline of the courses, as well as the regulations governing them, is given below; full details will be found in the Calendars of the College and the aforesaid Universities.

The degree B.Sc. (Agr.) the Department of Education will accept as the academic qualification for a Specialist's Certificate in both Science and Agriculture and for a Public School Inspector's Certificate. The Specialist's Certificate will be granted after a year's professional training at either of the Faculties of Education, and the holder will be qualified to teach both Science and Agriculture in a High or Continuation School or a Collegiate Institute. Under this new scheme, the County Representative will continue to discharge his duties as such, and will, in addition, conduct, under the School Board concerned, classes for farmers and farmers' sons throughout the county, while the duties of the holder of the new Specialist's Certificate will be confined to the regular Secondary School Classes.

With a view to furthering the success of this scheme and thereby improving the agricultural teaching in the schools, the Government will give, at the end of each of the two years taken at the Agricultural College, a scholarship of $100 to each candidate for the degree who passes the final examinations of the year and is recommended therefor by the President of the College. Moreover, as soon as the new class of specialists is available, the Government will make liberal grants for the encouragement of Secondary School Classes in Agriculture, in the form of contributions to their maintenance and of additions to the teacher's salary. The aforesaid payments to teachers will, however, carry with them an obligation on the teacher's part to teach for at least two years in the Province of Ontario; but, as in the case of similar grants made by the Department of Education, the return of a proportionate amount of the total will release the teacher from this obligation.

Experimental Unions and Students' Associations.

One of the means whereby the Agricultural College can continue to affect the education of the ex-students, and through them the progress of agriculture in the locality, is by keeping in touch with them. That may be done through Students' Associations and Experimental Unions, such as exist at the Ontario Agricultural College, and by other means. In the beginning, such Students' Associations require to be fostered by the College; after the ex-student body becomes numerous enough, the Students' Association can take care of its own affairs, and serve the College in advisory and other capacities in most helpful ways.

Travelling Scholarships.

In France, Germany and Denmark it is the custom for sons of farmers to travel for information and to observe and learn the methods of the best farmers in different districts. Much is made of that means of instruction. In Denmark the Commission met an excursion of small farmers to the Husmand School at Ringsted. In this connection it is worth while to consider what has been done by the Royal Agricultural Society of Denmark as reported in Part III.

In Canada excursions to Agricultural Colleges and Experimental Farms have awakened much interest in the work of these institutions; but the time devoted to the visit as a rule is all too short to enable visitors to derive full educational benefit.

Real Scarcity of Trained Men.

At the present time the supply of competent men obtainable as Instructors in Agriculture is entirely inadequate to meet the demand. It is important that thoroughly trained men should be available. Men for this educational work need liberal education and practical experience of work similar to that of the department which they are to direct. Their general education should give them a good grounding in the natural sciences, particularly in their relation to the science and art of agriculture. They should have a good knowledge of technical and practical agriculture and farm practice, and have sound acquaintance with the important questions in economics and sociology, as applicable to rural communities. It is also important that they should have a good knowledge of the art of teaching and the underlying principles of it.

It would seem necessary that the District Instructor should be a graduate of an Agricultural College or have the education of a Rural High School and be a graduate of the Science Department of an Arts College. The qualification for a teacher in a Rural High School or a County or District Agricultural School should not be less thorough and wide.

The First Duty of Agricultural Colleges.

When the Agricultural Colleges devote far more attention to the training of men and women who will become teachers, instructors and executive officers in connection with the organized system of agricultural education, it will not be necessary and it may not be advantageous for them to give up their 2-year courses and shorter courses.

The holding of short courses in each Agricultural College would continue to attract to the College large numbers who might not attend short courses in their own locality, and others for whom more advanced instruction could be provided at the headquarters.

It is not suggested that the Agricultural Colleges should drop any of the work they have been doing, but that each College should as a first duty direct its efforts to provide suitable courses for men and women required to fill

the professional or official positions in connection with the further development of agriculture and agricultural education.

It would seem desirable that the 4-year courses should be specially for those who are being educated to render professional and continuous service in some public capacity; that the 2-year courses should qualify men and women for public work or to return to their farms and homes; that the 1-year courses should serve also those who are to return to their farms, and those who are to occupy public positions requiring long practical experience and acquaintance with farm management, in connection with county work and Illustration Farms.

SECTION 12: ORDER OF PROCEDURE.

Rural Elementary Schools.

The question of prime importance is to get the teachers and courses of the Rural Elementary Schools faced aright. A good deal is being done in several Provinces, notably those which have Agricultural Colleges and provide special courses for rural teachers, but years of time will be required.

Intermediate and Rural High Schools.

Early efforts should be made to establish or extend Intermediate Rural Classes (or Schools) and suitable Rural High Schools for pupils of both sexes from 13 years of age upwards.

Resident or Travelling Instructors.

Resident or Travelling County or District Instructors for Farming and Housekeeping should be provided as soon as is practicable. These Instructors would carry on work similar to much of what is undertaken at present by District Agricultural Representatives in Ontario and Quebec. The character and extent of the work would be adapted to the conditions of the district and should follow along the lines indicated in this Chapter. As soon as provision is made for Intermediate Rural Schools or Rural High Schools the Instructors should be associated with them; they would be particularly useful in helping to co-ordinate work on the farms with the work at the schools—the Agricultural Projects with the Educational Projects.

It would be an advantage, and it has almost become a necessity, for the County or District Instructor to have both suitable headquarters and an assisting staff adequate in numbers and efficient in qualifications.

As soon as the County or District Instructors could be associated with Illustration Farms, such as those arranged for by the Committee on Lands of the Commission of Conservation, it would be feasible to develop the various divisions of the work to much greater advantage. The Neighborhood Improvement Associations, which co-operate with the expert in the development of the Illustration Farms, would be good local bodies with which to work.

County Agricultural and Housekeeping Schools.

Concurrently, a beginning should be made in the establishment of County or District Agricultural and Housekeeping Schools for young men and women from 17 years of age onwards. These would be somewhat similar in purpose and organization to the Danish Agricultural Schools and the County, District or State Agricultural Schools of the United States. Of these latter there are now more than 100, located in 17 different States which support them in whole or in part. They are distinct from the Agricultural Colleges. Two features distinguish these County or District Agricultural and Housekeeping Schools. The courses are short, each complete in itself and directly and specifically vocational for those who have already had a few years of experience in practical work; and the Schools are residential.

Training of Experts.

Particularly from the action of Germany, France, England, Ireland and the United States, it is evident that the State as a whole regards a supply of thoroughly trained and competent teachers, specialists and leaders as a prime necessity for the promotion of agricultural education and the continuous betterment of agriculture and rural conditions.

While the Commission recognizes the excellence of the work being done at the several Agricultural Colleges in Canada at the present time, it is of opinion that extensions of their work are required to meet the growing needs of the agricultural population, and to be ready for the Provisions recommended for Education for Rural Communities. These extensions should be provided for at once in the following directions:—

1. Courses for the preparation of teachers qualified to carry on the science work and practical work in connection with Intermediate Rural Schools, Rural High Schools and County or District Agricultural Schools.

2. Courses for the purpose of preparing District Instructors who, in addition to technical and practical instruction in agricultural work, would receive training in the art of teaching and in the administration of affairs in rural communities.

Organization of Local Rural Development Boards.

While these matters are in progress for the training of suitable men in sufficient numbers, at the Agricultural Colleges and elsewhere, for directive positions and as teachers and instructors, the organization of Local Rural Development Boards should be gone on with.

The first steps to be taken in a County, after the formation of a Local Rural Development Board, would be the making of a Census Survey of the numbers, ages and previous education of the young people needing further education. Early in its work of investigating and planning, the Local Development Board should obtain the advice of an expert or experts, preferably by means of personal conference after having gone over the ground.

Then a statement of a proposed plan of the *Development Service* with the *Budget* could be sent on to the Provincial Authority. After that, experience, discussion, counsel and co-operation would make the path to follow plain and clear.

In this way Canada could bring into full operation a system of instruction for the whole rural population more complete than has been found in any one country, but not less thorough than is required by Canadian conditions.

CHAPTER X: EDUCATION FOR HOUSE-KEEPING OCCUPATIONS.

INTRODUCTORY.

It cannot be insisted upon too much that the occupations of the people have a far-reaching influence and effect on the quality of national life. The homes are the units on which civilization is based and out of which it grows. For every reason it is important that the girls and young women should be given a chance to develop vocational ability for housekeeping and homemaking.

The influence of the homes on the children is direct and continuous. Good homes minister to the welfare of the people by ensuring conditions under which the children may be healthy, wholesome and happy, and may be directed towards the exercise of right ambitions and aspirations. The effect of the homes on the level of the community is like the influence of the moon on the level of the sea. While individual achievement in any one direction may raise the person to the top, the crest of the wave is only a little above the general level ordained by gravitation and the tide. Good homes well-kept keep the tide of life high for the whole of the community and the State.

Other Countries are Doing Much.

In European countries much attention has been given in recent years to the question of the vocational education of woman, particularly for housekeeping and homemaking.

In England and Scotland, lessons in domestic subjects are provided for in elementary and secondary schools, and also in a number of special Polytechnics and Central Institutions, particularly for the training of teachers and leaders.

In Ireland much attention has been paid to this branch of vocational education by the Department of Agriculture and Technical Instruction. A Central Training School for Teachers in Domestic Economy subjects is maintained at St. Kevin's Park near Dublin for those who are to teach in urban communities. Those who are to teach in rural communities receive their training at the Munster Institute near Cork. The School for Girls at Loughglynn has some suggestions of value for rural communities in Canada.

In Denmark the provision of Schools of Housekeeping is more recent and less complete than in some other countries. The report of the School of Housekeeping near Askov contains information that might be useful to rural communities in Canada.

In France special courses are provided for girls from 11 and 12 years of age onwards; and the vocational education of girls toward housekeeping is everywhere emphasised.

A statement of some of the provisions in Germany is given in the report on that country. In the Kingdom of Prussia alone there are 50 Stationary

Housekeeping Schools, 41 Itinerant Housekeeping Schools, and 3,781 Rural Continuation Schools where Housekeeping is taught.

In the elementary schools of Switzerland much care is taken to instruct the girls in sewing, knitting, darning, crochetting and mending. In the schools of some cantons from 6 to 8 hours per week are allotted to these branches during at least four years.

The United States has been regarded for many years as leading in the matter of the vocational education of women. If there be any respect in which a comparison of merits might be made to the credit of Europe, it is in regard to the training and qualification of those who are appointed as teachers. The European countries follow the practice of a prolonged and thorough training of those who are to teach, whereas in the United States, as in Canada, a good deal of importance is attached to resourcefulness and ability to make a good showing to the public.

In all countries voluntary associations of women have taken the lead in pressing for improvements and advances in the education of girls and women, and have thereby accomplished much. Their efforts have led to the maintenance of special classes and schools by public authorities. Most of the progress in Germany was due to the work of voluntary associations. Reference has been made in the report on Germany to the Lette-Verein and to the Swabian Women's Society and the Women's Society of Frankfurt.

The reports on all these matters, as learnt from the inquiry in the different countries are contained in Part III.

SECTION 1: THE NATIONAL COUNCIL OF WOMEN.

In Canada several associations of women, notably the National Council of Women, have been active in seeking for the inclusion of provision for the training of girls for housekeeping and home-making in the elementary and secondary schools. Mrs. Lyle appeared before the Commission at Hamilton, Ont., with others representing the Hamilton Local Council of Women. Her statements may be taken as representative of the attitude and desire of other women who testified before the Commission. Some of the main features of her evidence are as follows:—

In a city like Hamilton, if the early training of the schools is to be fruitful of good results, there should be classes where girls, who do not go to the Collegiate Institute and who are obliged to earn their living, could have further instruction.

A large proportion of the girls leave school at 14 years of age when their public school course is ended, many of them going into factories and stores. The Local Council of Women would like to see day and evening classes established in the Technical School whereby girls would be enabled to continue their studies until they were qualified to enter a higher class, such as a Housekeeper's Course embracing every phase of work necessary in a well-ordered home. These classes should be open to the children of the well-to-do equally with the girl who works to earn her living; the former needs to supplement her school training as well as the latter.

The present difficulties in Hamilton are two:—

1. Many of the pupils, owing to various circumstances, never enter the Collegiate Institute. They are thus prevented from receiving the instruction given there.

2. The lack of training in domestic subjects prevents them from going to Macdonald Institute or Macdonald College.

The Local Council of Women would like to see service in the home lifted to the same plane as the profession of nursing. The Council does not believe the home should continue to be the only place for which special training is not regarded as necessary.

Domestic Service is Looked Down Upon.

As matters are at present the better class of intelligent girls prefer to go to work in stores or to become stenographers. The reasons they give for reluctance to work for wages in homes are varied, such as: "If I go to domestic service my friends will cut me"; "If in service you are looked down upon"; "I have a sister who is a trained nurse; she seems not only to keep her old friends but gains new ones, while I am regarded as an outsider."

If girls could pass the necessary examinations, and receive certificates showing their qualifications for service, as a nurse does, the Council thinks that in time it would revolutionize the household service question. At present high wages must be paid for inefficient work. The training in Domestic Science at little expense in their own town or city would produce a body of skilled workers who could command the highest wages.

To be able to engage skilled help by the day, week or month would be a blessing in many homes. In apartment houses, where there is often no bedroom accommodation for a maid, it would be invaluable. Under some such system, servants would be paid for the time they worked, and thus be enabled to take as many or as few hours for rest or holidays as they chose.

These points from Mrs. Lyle's statement are practically a summary of much that was brought before the Commission throughout Canada.

SECTION 2: WOMEN'S INSTITUTES.

In Belgium.

Perhaps nowhere else have the Women's Institutes made more progress than in the Province of Ontario. Belgium has adopted a similar scheme. These Institutes have for their objects the social, economic and moral improvement of country life. They pay much heed to the acquisition of knowledge useful in regard to farm and home work, but their field of discussion is usually the advancement of the rural life of the community. The following is taken from a statement of the Women's Institutes in Belgium by Mr. R. B. Greig to the Board of Education of England:

"The Women's Institute is an association of farmers' wives, daughters and sisters, who meet periodically for the following among other purposes: to hear lectures, read papers, and study books on professional subjects, i.e., dairying, poultry keeping, gardening and all the minor rural industries, on cooking, laundry work and dressmaking; on household sanitation, home hygiene and ambulance

methods; on the choice and care of furniture and pictures; on the rearing and education of children, and on any other means for the improvement of country life. The institutes have also a recreative side, and attention is given to music and literary subjects.

"The women work in association with the State Agronomist, the peripatetic classes, and the local schools of domestic economy. Assistance is given by the Government, under certain regulations, and the members pay a small subscription, but as the conferences and discussions are chiefly addressed by members, by teachers in State Institutions, and by others who give their services free, the expenses are not great.

"A National Committee co-ordinates all the Institutes, and one or two periodicals, notably *La Fermière*, have been created for, and are entirely devoted to, the service of the Institutes. There can be no doubt that these Institutes will exert an incalculable influence upon the social life of rural Belgium."

REPORT OF FIRST COURSE IN ONTARIO.

A beginning was made in the autumn of 1911 to provide a course of instruction in Household Subjects in connection with the Women's Institutes of Ontario. The report of the first Demonstration Lecture Course made by Mrs. C. H. Burns to the Department of Agriculture of Ontario gives information of such clearness and detail that it is presented here in full for the service of Women's Institutes when they begin to take up this matter in all the Provinces of Canada.

"If we refer back to the Convention of Women's Institutes of November 1910, those of us who were there, or who read the report of that Convention, will remember that the question was brought up at that Convention of the possibility of sending out trained teachers to give a series of lectures to the Women and young girls of Ontario, who are unable to leave home to avail themselves of a Domestic Science Course. At this Convention a committee was appointed to see what could be done towards accomplishing this object. This Committee met in May, 1911, to devise ways and means for carrying out this scheme, with the result that finally the Women's Institutes branch of the Ontario Department of Agriculture agreed to become responsible for the cost of a trial course.

Demonstration Lecture Course.

"The Superintendent of Institutes engaged the writer, a graduate of Macdonald Institute, to give a Demonstration Lecture Course consisting of fifteen lessons to a group of adjacent Institutes:—Cayuga, Dunnville, Hagersville, Canfield and Caledonia in Haldimand County, and Delhi in Norfolk County.

This group of Institutes entered into a contract with the Department of Agriculture:

To guarantee twenty-five full course members at $1.00 each.

To make the classes as large and as profitable as possible.

To make the work of the Demonstrator as valuable as possible by giving such assistance as would aid in making the work run smoothly; such as appoint-

ing an assistant who would become responsible for the opening of the room, do the local marketing, and assist in clearing up and washing the dishes.

The Department agreed to send to this group of Institutes a trained Donestic Science teacher to give a Demonstration Lecture Course in Cookery. This Course covered a period of fifteen weeks. Each Institute was given a class one day weekly until each Institute received the full fifteen lessons. The teacher instructed each local assistant in her duties, and furnished her with written directions one week in advance.

It was the teacher's duty, as well as privilege, to make an initial trip to each of the Institutes chosen, in order to organize classes, to make preliminary arrangements and to help each Institute select its lecture list.

The Superintendent suggested that where possible it would be well to have the High School girls take advantage of this Course. This plan was carried out in two towns, Dunnville and Caledonia, and necessitated having an evening class, as well as an afternoon class in both towns, because of the large attendance. This made in all eight Demonstration Lectures a week.

The classes were held in the afternoons at 2.30 or 3 o'clock, as best suited the convenience of the class, and lasted for an hour and a half to two hours. The evening classes began at 7.30.

Some of the Institutes thought it was advisable to issue course tickets to those taking the whole course of lessons. These tickets were shown on entering the hall. The secretary of each Institute, every week, regularly entered in a book the attendance of those taking the single lectures. In this way the total attendance at each class and the attendance of those taking the single lectures could be kept separate. The total membership of regular full course members from all of the six towns amounted to two hundred and forty-four (244) persons.

The Attendance was Good.

"The total attendance at the lectures throughout the course amounted to three thousand, one hundred and fifty four (3,154).

The above figures do not include any of the High School girls.

The highest attendance at any place was seventy-six (76).

The average weekly attendance at classes was thirty-five (35).

The lowest attendance was ten (10). This was at a small Institute in the country, when the roads were in a very bad condition, and where most of the members had to drive some distance to the hall. The attendance throughout the course was most encouraging, for during the fall and winter we experienced so much bad weather and bad roads that it was difficult for many to attend the classes.

The Local Management.

"It will, I am sure, be of interest to you to know how these six Institutes managed their part of the work, and how they financed their share of the expenses.

Four of the Institutes were fortunate in that they were given the use of the "Town Hall" or Council Chamber in their respective towns. This kept

down their expenses considerably. The additional expense, over and above rent for a hall, that each Institute would have to meet, was for fuel and supplies to cook with. In one small Institute, where the hall was given free of charge, the Institute members took turns in giving the supplies for each class, and any time the supplies exceeded the average amount called for, two members united in giving the supplies for that day. One member gave fire-wood as her share. In this way the cost of the Demonstration Lecture Course to the members of this Institute amounted to very little more than the price of their course tickets. This proved to be a very satisfactory arrangement for this small Institute, that had no prospect of having as large classes as the larger town; and the members said they did not feel the expense of giving the supplies in this way.

The Institutes in the larger towns, because of their larger classes, had no trouble whatever in financing their respective courses. All of these Institutes purchased their supplies, or the major portion of their supplies. Where it was possible or convenient a supply of staples was purchased, such as sugar, flour, flavoring, and any materials that would be used frequently throughout the course. By having these supplies on hand, the few extras supplies for each week were procured with less expenditure of time. Whenever the requisitions for supplies called for some trifling things, such as a few vegetables, spices, or three or four apples, some of the members donated these; and in this way the expenses were kept down to an average cost of from 60 to 65 cents per class per week.

As regards the assistant, the Institutes found it was not feasible to secure one assistant to undertake the necessary duties throughout the whole course. The Institutes arranged that two members should be appointed each week to procure the supplies for the following week, and to assist the Demonstrator in whatever way was necessary. The Demonstrator was always to leave, a week in advance, the list of supplies for the following week. This plan was most agreeable to all, and by the members so staunchly helping their presidents, no one member felt the responsibility a burden.

To carry a Demonstration through successfully and smoothly, it is necessary that the supplies are at the hall in time for the Demonstrator to arrange some simple preliminary work, and to feel assured that there is nothing forgotten.

Character of the Lessons.

"The Demonstrator begins her lesson by giving a short talk on the subject to be demonstrated. She gives the food value of the food itself, the uses of such food in the diet, and shows its economic food value by comparing it with the more expensive foods of similar composition.

The next step is a practical demonstration of cooking this food or foods, with full directions and reasons given for each step in the process. For example: one day the lesson was on Milk, Soups, Puddings and combinations, with special relation to infant, children's, and invalid diet. Suitable dishes were prepared as would carry out this idea, as, two cream soups (cream of tomato and cream of pea soups); also a milk and bread pudding, and a caramel blanc mange pudding. The lighter invalid dishes were taken later in a lesson by itself.

The audience is always at liberty to ask the Demonstrator any questions that have a bearing on the work that is being demonstrated. The members of the classes gladly and freely availed themselves of this privilege, thus adding to their own knowledge and to the general interest of the lesson.

At the conclusion the dishes that have been prepared are passed, so that everyone who wishes may taste of them.

At the close of each class the Demonstrator announces the subject for the following week.

Much of the success of this Demonstration Lecture Course has been due to the hearty co-operation of the presidents and secretaries of these six Institutes, in assisting the Demonstrator to organize the classes, in securing as many regular members as possible, and in advertising the course of Demonstration Lectures to be given. Their support and enthusiasm did not stop when the classes were organized, but extended throughout the whole course.

The special instruction received by the lecturer from Miss M. U. Watson and her staff at Macdonald Institute, Guelph, by way of planning the course and preparing the details of each lecture, was responsible largely for the marked success attending our efforts." (Mrs. Burns' Report ends).

EXTENSION IN ONTARIO.

This initial course was followed up and arrangements made for other courses in Ontario. At some points some of the High School class, or the senior girls of the Elementary School, receive domestic instruction. In that case arrangements are made with the Instructress to hold special classes for them. That is done without additional cost, except for meeting place and supplies. The Demonstration Lecture List for 1912-13 indicates rather than defines what might be undertaken to suit local needs. The following is the announcement by the Ontario Department of Agriculture:

Demonstration Lecture List, 1912–13.

Each Institute concerned may select fifteen lectures from the following list.

If any Institute wishes to enlarge any one subject into two lectures in order to cover the ground more thoroughly, it may be so arranged.

The sequence of the lectures should be left to the lecturer to arrange. She will, however, defer to the wishes of the Institutes as far as the proper development of the whole series will permit.

The lecturer will place especial emphasis in all lectures upon the food value of the foodstuffs used, and upon the comparison of money value of the different foodstuffs, as related to food value.

Regular List.

Lecture No. 1. Fruit—Typical methods of cooking; combinations; different ways of serving fresh fruit.

2. Vegetables—Fresh, starchy and dried.
3. Milk—Soups, puddings and combinations, with especial relation to infant, child and invalid diet.
4. Cereals and Cheese—Various methods of cooking; their high food value compared with other more expensive foods.
5. Eggs—Correct methods of cooking; variations on methods; storage.
6. Tender Meats—Roasting and broiling; the correct cuts; food value compared with other meat cuts and other foods.

Lecture No. 7. Tough Meat—Braised dishes, stews and soups.
8. Substitutes for meat—Nuts, beans, fish.
9. Baking-powder breads.
10. Yeast Bread and Fancy Breads.
11. Cake and little cakes.
12. Puddings and Desserts.
13. Salads—Preparation of the ingredients, dressings, etc.
14. Poultry—Drawing, trussing, roasting; fricassee, etc.
15. Invalid Cookery—Liquid diet, semi-solid, etc.

Optional List.

1. Vegetables—fresh, starchy and dried.
2. Made-over dishes.
3. Gelatin Dishes.
4. Hot weather Foods.
5. Breakfast Dishes.
6. Fireless Cookery.
7. Frozen Dishes.

The Department prefers to have the Institutes choose the Demonstration Lectures indicated in the "regular list." If, however, there is a strong preference for one or more of the topics given in the "optional list" in place of some of the "regular" subjects, they may be substituted.

Home Nursing Lecture List.

There is also a Home Nursing Lecture List for such Institutes as prefer to have those subjects dealt with. A list of those lectures is as follows:—

1. Sick Room—Sanitation, Ventilation, care, etc.
2. Bed-making for various forms of sickness.
3. The Bath.
4. Hot and Cold Applications.
5. The Administration of Food and Medicine.
6. Emergencies.
7. Bandaging.
8. Disinfectants, their use and abuse.

There is also a Sewing Course, which consists of 7 or 8 lessons in the making of Shirtwaists and Plain Sewing. The Institutes are not required to furnish supplies for either the Home Nursing or Sewing Courses. The charge for each is the same as for the longer course in Domestic Science.

SECTION 3: MISS WATSON'S SUGGESTIONS.

The Commission obtained information of real value regarding work by District or Travelling Instructresses and Short Courses by them, from "Conversation" with Miss Mary U. Watson, Director of Home Economics, Macdonald Institute, Guelph, Ont.

The following are the main points, arranged from that source:

Organization.

In the Province of Ontario, a good arrangement would be to take a County as an area and make arrangements with five Women's Institutes to receive demonstration lessons or instruction once a week. At each of the five places,

arrangements could be made for the Itinerant Instructress to carry on the work in the Elementary School or High School with pupils who are ready for it. Such a course might continue for twenty weeks. Once a week would seem, for the women of the Women's Institutes, often enough. Other interests would prevent the women from attending more frequently, and the time between the demonstrations would give them the opportunity to think over what they had seen and heard, put some of it to the proof, and absorb it into their own methods of work.

A second group of five Centres within the County could be chosen for the second half of the year. In that way, one Travelling Instructress would provide demonstrations for 10 Women's Institutes and 10 Elementary rural or village schools.

Each place might with advantage receive a second course, also lasting 20 weeks.

Advantage of Planning.

In providing courses for Women's Institutes, it would be advantageous to have a full synopsis or record of the information to be given during the illustration lesson. At the beginning of all such lessons for women it is desirable to give an outline of the plan which it is proposed to follow. This impresses the desirability of planning for the work of each day in advance. A general statement from the women's meetings is to the effect that planning the day's work in advance and carrying it through according to plan, in marketing as well as in inside management, saves time and brings good results.

Training and Salary.

For Women's Institutes it is essential that the Instructress should have had practical experience in housekeeping. In addition to that, unless she were already a trained teacher, she would require a course of two years at such an institution as the Macdonald Institute. If she were already a trained teacher and had had practical experience in housekeeping, a course of one year would be enough. Such women could probably be obtained at a salary of $1,000 per annum plus out-of-pocket expenses for travelling. A lower rate for the Maritime Provinces would be equivalent to a higher rate, than the salary mentioned, in the Western Provinces.

As the work would develop, such a Travelling Instructress might become a County Supervisor for Housekeeping as taught in the Elementary and High Schools.

Preparation of Teachers.

Miss Watson laid emphasis on the essential difference in the character of the demonstration lessons to be given to the women who are already employed in housekeeping, and to the girl pupils in the schools. Chiefly for that reason, she did not think that one of the women, who attended only the demonstration

course for 20 weeks, could afterwards conduct the work as a non-professional assistant to the teacher in charge of the Elementary School.

For Housekeeping work in Elementary Schools the ordinary teacher, who has come up through the classes in an Elementary School (with proper work and co-ordination of work in needlework and housework), could teach those branches in the Elementary School, but would not be so well qualified or properly qualified to carry on work in the branch dealing with foods.

The elementary teacher, after the 20 weeks' course at her school, might carry on the needlework and housework, but would not be qualified for the work on foods and cooking. After a time a headquarters in the County might be developed at which such teachers could receive supplementary training. Besides, one or more headquarters should be developed in the Province as centres for the training of teachers in Dressmaking and Millinery for small towns.

Method of Instruction.

The "How" only should chiefly be given regarding foods and cooking in the Elementary Schools, from age of 11 or 12 to 15 years; the "Why" during the High School period. The preparation of foods and serving of meals should be in this branch the culmination of work in the public schools for girls. It is a good plan to begin with simple statements, simple problems and simple situations for school effort. A good plan is to make the conditions, as far as possible, such as to lead the pupils to discover things for themselves. That applies more to the children in schools than to the adults at the demonstration lessons. Experience has proven it to be advantageous and necessary to proceed with the work very slowly at first, and to make sure that the work to be done is planned for and undertaken in the best way for educational ends. A process of unlearning is difficult and long.

Miss Watson had found text-books for the pupils of public schools to be neither suitable nor useful. By the time the children come to the High School they should be trained how to use books. The using of a textbook does not train the pupil to use a book or books; it often has quite the opposite effect.

Simple Equipment.

In the equipment for single Rural School Centres, kerosene or gasolene individual stoves may be used. The Macdonald Institute has the specification of an equipment, including covers for the desks, which costs about $70 for 12 pupils. Children should be encouraged to practise on the home stove and in home work. Hitherto the main cost in fitting up housekeeping centres has been the cost of the special table and the plumbing work.

The Home and the School.

One of the finest results from having housekeeping work in public schools is the way it keeps up the interest between the school and the home.

There would be great difficulties in making the homework of girls in this connection an integral part of school training on a plan similar to the Farming-Projects of the Massachusetts plan for Co-ordinated Agricultural Education. For pupils in or beyond the High School age, that might be feasible.

Regarding a law for compulsory attendance of girls at Continuation Classes, it would be difficult to get it passed in Ontario, but its effects, if passed and acted upon, would be wholly beneficial.

Physical Culture.

If the exercises are to be at all strenuous in mature pupils, the training should be begun while they are quite young. Otherwise the exercises for pupils from 15 to 18 years and upwards should rather be such as to give poise and grace. It is most desirable that the games and exercises should be arranged by a competent teacher, as they have an influence on the development of sets of muscles and powers. A good Physical Director would arrange for games for certain results on health and enjoyment. Much of the drill for girls in the schools at present is useless from want of plan and from want of energy in execution. Without energy on the part of the teacher and pupils, the result is about the same as that from a dawdling stroll compared with brisk walking in the open air.

Correspondence-study Courses.

Correspondence-study Courses could be provided with very great benefit to women who are unable to attend a course of instruction under a teacher. (Report of Miss Watson's suggestions ends here.)

SECTION 4: SOME CONCLUSIONS.

Elementary Schools.

The Commission is of opinion that preparation for Housekeeping should be provided for in all the courses for girls from the age of 11 or 12 onwards. Such part of the courses would be in the nature of Pre-Vocational Education for Housekeeping. Such courses are at present provided in many of the Elementary Schools in all the Provinces of Canada. They are provided in the Supplementary Courses of the Public Schools in Scotland, at many of the Elementary Schools throughout England, and in France.

Two departures from the usual form of organization may be mentioned; in Aberdeen the girls devoted 3 weeks continuously, before they left the Elementary School, to practice and training in domestic subjects. Another example was a residential school maintained by the County Education Committee at Northampton, England. In this instance, girls in the rural Elementary Schools might win Scholarships. These entitled them to a course of 3 months practical training in the County residential School for Domestic Science. The whole cost

to the County Education Committee, not including charges on capital account, was reported to amount to less than $2 per week per pupil. The School had about 30 pupils in attendance. Other County Education authorities in England have similar centres.

Secondary Schools.

The Commission is of opinion that it is desirable to provide Secondary Education for girls with particular regard to instruction and training in the preparation and serving of foods, the preparation, cleansing and use of clothing, housekeeping including ventilation, heating, lighting and sanitary administration. This might be done at the Housekeeping Department of an urban High School or at a Rural High School, with some co-ordination between the home and school work.

Continuation Classes.

The Commission is of opinion that Continuation Classes for young women, devoted to instruction and training for housekeeping occupations, should be provided in all cities and towns. Attendance at these, during at least one period per week, should be continued until 18 years of age, unless the girl is receiving some other form of education. These might be arranged for in connection with (a) the Public School System (b) a Technical Institute (c) or a separate school such as a Middle Housekeeping School.

Middle Housekeeping Classes (or Schools).

The Commission recommends that Classes be provided for:—

(a) Housekeepers who can devote one or more periods per week for a term of 3 months.
(b) Young girls who have left school and who desire training as house-workers and home-helpers.
(c) Women in domestic service or seeking to qualify for domestic service.
(d) Women employed at industrial and business occupations during the day.

Courses for those who had had experience in housekeeping would be chiefly by demonstrations, instructions, lectures and reading. Particular attention should be given, as in the German schools, to the study of costs and values, to analysis and allotment of income to different classes of expenditure, and to simple book-keeping.

The courses for those who require it should provide enough practice in Cooking, Sewing, Millinery and Housekeeping to enable them to profit in a practical way by attendance.

For those to whom it was practicable, Housekeeping-Projects in the daily work of the home could with advantage form part of the school course.

This School might form part of a Middle Technical School; but it would appear desirable to aim for a separate institution under separate management.

In carrying on the work of the School a good plan might be to arrange forenoons for mistresses in charge of their own homes, afternoons for young girls and for house servants and girls preparing for service, and evenings for those employed at industrial and business occupations during the day.

The Training of House-workers.

The Commission is of opinion that general provision should be made for the instruction and training of those who desire to qualify for service for wages in the homes of the people. Testimony was brought before the Commission from various quarters, to the effect that competent young women are unwilling to accept places as workers in homes because the terms "domestic", "hired girl" and "house servant" have come to be regarded as indicating a condition of social inferiority which they are unwilling to accept. It appears desirable in the interest of good citizenship to remove the prejudice which has thus been created, and at the same time to give the house-workers an opportunity for thorough qualification for their duties.

The Commission is of opinion that short courses of instruction and training in housework and housekeeping should be provided. These might be of from one to six months' duration. The pupil taking a course satisfactorily would upon examination be entitled to receive a certificate of competence as a "Home-helper" or "House-worker" of the first, second or third class.

Provision should be made in Continuation Housekeeping Classes to enable the "Home-helper" or "House-worker" who could not devote time continuously to such training, to cover the ground and obtain the certificate by devoting one or two half-days per week to the classes.

To meet the case of housekeepers who desire to obtain competent house-help for a portion of a day or week, or house-help which would not reside in the home of the employer, it would seem desirable to have a trial made as to whether that could be furnished in connection with a Middle Housekeeping School. If a residence were part of the institution, living accommodation might be provided at rates to cover the cost.

If a "Home-helper" or "House-worker" held a first-class certificate she should be entitled to remuneration adequate to her training and ability. Such workers would serve the community, in respect to housekeeping under normal conditions of health, in a manner somewhat similar to that of trained nurses in time of sickness. Whatever promises a remedy for present conditions in the supply of labor available as "Home-helpers" and "House-workers" is worthy of careful consideration and fair trial.

It is a trite saying that people are more moved by instincts, prejudice and fashion than by judgment. The harmful notion has spread and is spreading throughout Canada that the doing of housework, and serving as a home-helper for pay, is less appropriate for and worthy of young women than serving as office, shop or factory workers. To eradicate that should engage the efforts of women and men, who all are directly concerned with home-making and housekeeping.

Resident or Travelling District Instructresses for Housekeeping.

The Commission recommends the employment of Instructresses to carry on for the housekeeping interests of rural districts work similar to that undertaken by the Resident or Travelling District Instructors for Farming.

1. As a beginning, a Travelling Instructress in Housekeeping might meet a class of women arranged for by a Women's Institute, or other similar organization in the locality, one half day per week for a term of 20 weeks.

The other half of the same day the Travelling Instructress might carry on work with the girls and teacher in the school (Elementary, Intermediate or High) of the locality.

2. They should be associated when necessary, in the capacity of co-ordinators, with the Housekeeping-Projects carried on at home by pupils attending the Intermediate Rural Schools and the Rural High School.

3. These Instructresses should provide demonstration lectures in Cooking and Housekeeping work, chiefly as a means of directing public attention towards channels along which systematic educational work could be conducted.

4. As soon as practicable, they should be associated with the Short Courses of a County or District School or a Middle Housekeeping School.

As soon as practicable, they should be associated with the work of a Neighborhood Improvement Association and an Illustration Farm for the locality, similar to those arranged for by the Committee on Lands of the Commission of Conservation.

It is important to bear in mind that there is an essential and fundamental difference between the kind of instruction and demonstration suitable for the women and that which would be advantageous to the girls in school.

After the first year or two more than one Instructress would be required for an ordinary county area.

Training Teachers and Leaders.

The Commission is of opinion that advanced education for the purpose of training teachers, instructors and leaders to serve in professional capacities, should be provided in the Colleges of Household Science and Home Economics. Such Colleges, by means of short and long courses, would prepare the teachers and instructors for the work of Housekeeping Education in cities and towns, and also educate Travelling Instructresses required in connection with the adult population in rural communities. Such courses would be similar to those already provided at some of the Normal Schools, at Macdonald Institute in connection with the O.A.C., Guelph, Ont., and at Macdonald College, Que.

In this connection it would be worth looking into the organization and courses of study at the Munster Institute, Cork, and the Central Training School of Domestic Economy at St. Kevin's Park, Dublin. There would be advantage from a study of the courses provided and the work done at the Margaret Morrison Carnegie School at Pittsburgh, Pa. Useful information would be found

also from a study of the Domestic Science, Domestic Art and Domestic Industries School in connection with Teachers' College, New York. And the highest form of training, that in the Faculty of Household Science of the University of Toronto, should not be overlooked.

SESSIONAL PAPER No. 191d

CHAPTER XI: INDUSTRIAL RESEARCH.

The field of Industrial Research may not be mapped off definitely from the area in which any seeker after knowledge labors for the service of mankind. No one can tell in advance what discovery of today in "Pure Science" may be "Applied Science" in everyday affairs of tomorrow.

In the course of its enquiries the Commission learned of and looked into the work of the Bureau of Industrial Research of the Universities of Pittsburgh, Pa., and Kansas under the Directorship of Dr. Robert K. Duncan, the originator of the plan which has been developed at these two institutions. The plan provides for the creation and maintenance of Industrial Fellowships in connection with the Universities. In brief the chief features of these Fellowships are:—

(1) The University provides the laboratory accommodation and selects the Investigators (the Researchers).

(2) The manufacturer, or other donor, indicates the specific subject or matter to be investigated and provides funds to support the Fellowship for the purpose of such investigation.

(3) Any discoveries become the property of the manufacturer (or the donor of the Fellowship) subject to certain conditions, contained in the agreement between the donor and the University, at the time the foundation of the Fellowship is accepted.

A copy of the agreement and a list of the Fellowships are given hereafter.

Without forgetting the immensities of realized values and unrealized possibilities of other arrangements and provisions for Research work, the Commission considers the Duncan plan to be so suitable and adaptable to Canadian conditions that it contents itself for the purpose of this Chapter with only the presentation of Dr. Duncan's scheme in somewhat full detail.

SUMMARY OF STATEMENT BY DR: ROBERT K. DUNCAN *RE* BUREAU OF INDUSTRIAL RESEARCH.*

At the University of Kansas in 1907 Dr. Duncan entered into negotiation with an eastern corporation for the establishment of some type of co-operative work by which the corporation, with its knowledge of the art and its facilities

*This statement is summarized from Dr. Duncan's book, "Some Chemical Problems of Today," published by Harper & Brothers, 1911; and contains extracts from a paper presented by Dr. Duncan at the meeting of the Section of Physics and Chemistry held October 3, 1912, and published in the Journal of the Franklin Institute, January, 1913. Dr. Duncan's "Conversations" with the Commission on the occasion of a visit to the Laboratories at the University of Pittsburgh and the observations of the Commission while there furnished the substance of the data, but not so completely as presented here.

for large-scale experimentation, might work hand-in-glove with the University of Kansas with its large laboratory, library, and consultative faculties, for the solution of some one important problem. The corporation concerned entered heartily into the idea, and they fought it out back and forth, they representing the corporations of the country and Dr. Duncan representing the Universities of the Republic, until finally they had together worked out what appeared to be a sane, practical scheme for the betterment of American industry and of the industrialists and University concerned, as well as for the advance of useful knowledge and the public good.

The scheme, which is now in operation in both the above Universities under Dr. Duncan's management, depends for its value and acceptance upon the mutually advantageous arrangement between manufacturing companies on the one hand, and the University on the other for the adequate solution of important manufacturing problems.

Inefficiency and its Cause.

The present condition of American manufacture is one of inefficiency. Every informed manufacturer, as well as most of those uninformed, knows that he has serious problems of such importance that in the conditions obtaining today their lack of solution means imminent loss for his individual instance of the industry. It may be safely said that wherever there is the smoke of a factory chimney, there are serious problems. Any intelligent chemist might very cheerfully accept a wager to go into any factory and within three days point out problems whose reasonable solution would make large differences in the dividends of the company; and these problems can be solved only by the chemist. Many a story might be told illustrating the amateurishness which pervades American manufacture, as differentiated from its expert office management.

The reasons for this inefficiency, as it appears in waste and lack of progressive factory practice, are clear and evident. Manufacturers of the past, though practically knowing nothing of applied science, forced their way to success through sheer fighting manhood and through the application of principles which they *did* understand. First among these principles was the creation of a tariff, which has injured the efficiency of American manufacture by shutting out the competition of the efficiency of foreign manufacture working through the application of modern knowledge; by hiding the importance of, and indeed by masking, the very presence of waste and non-progressive factory practice. To the difference between the cost of labor at home and abroad there has been added, among other things, the difference between scientific efficiency at home and abroad. In proof of this Dr. Duncan cites the procession of manufacturers before the Committee on Ways and Means, who in instance after instance, either consciously or unconsciously, claimed protection because of the waste and non-progressive character of his specific instance of the industry. Furthermore, many American manufacturers found it possible to rid themselves of the necessity for efficiency through the creation of combinations for the elimination of competition. Combined with these two methods of making financial progress

at the expense of efficiency, there were large stores of raw material everywhere at hand, and the needs of a rapidly expanding and rather extravagant population which swallowed anything presented to it. Because of these reasons American manufacture flourished.

Disappearance of Foregoing Conditions.

Conditions now are rapidly changing. Every sensible man knows that the tariff on its present high pinnacle lies in an unstable equilibrium. Combinations for the elimination of competition are now illegal and ever more and more dangerous. The vast stores of raw material are now segregated into the holdings of a few men, who will release them only at an onerous and sometimes distressful rate. The increase of the population, though rapid, has not kept up with manufacturing production, and in certain lines manufacture is threatened with overproduction. In addition, economy in purchasing is taking the place of extravagance. Finally, there is a world-wide increase in living expenses, necessitating increase in salaries, in cost of materials and transportation rates, to such an extent that even in the immediate future success or failure in many manufacturing operations will depend on the extent to which the manufacturer can eliminate waste and increase the value of his product. Speaking frankly and advisedly, and within the knowledge of all, American manufacture is proceeding to a crisis from the successful issue of which only efficiency will count. Most manufacturers now understand this, some of them dimly and gropingly, yet actually.

Applied Science and Shop Jealousies.

The American manufacturer, considering him in general terms, to which there are unmistakable exceptions, does not know how to proceed in order to gain this efficiency. For the main part he is ignorant of his own factory problems, at any rate of their full extent. He does not know how to go about the obtaining of adequate chemical aid, or how to choose the chemist, or the laboratory and library facilities with which this chemist should be provided; he submits the chemist to the jealousies of foremen, and by not granting him adequate power, to the stupidity and opposition of workmen; he does not know how to gauge his progress, and consequently subjects him to intolerable conditions of suspicion, intrigue and harassment. For the above reasons 90% of so-called research work carried on in factories is many times worse than loss, because failure places the finale on the possibility of that particular factory to understand the advantages of applied science.

Manufacturers as Amateurs in Applied Science.

Though the facts above stated are valid, it must not be inferred that because of them the American manufacturer is lacking in sense and judgment; for in shrewdness, acumen and energy, he may be compared with the representative manufacturers of any country on earth. His failure in successful factory practice is due, not to lack of ability, but rather to the fact that because of his

many abilities he has so far managed to do without efficiency in his factory practice, so that when thrown suddenly into the necessity of this efficiency he finds himself outside his field of knowledge, and hence peculiarly liable to amateurishness and to the mistakes that follow it. The Keely motor and the idea of making gold from sea water are merely gross instances of the general amateurishness that pervades all manufacturing practice wherever it comes in contact with natural knowledge and modern science.

It may be said then, that the American manufacturer is inefficient sometimes to the extent of 50% of the value of his product; that he is confessedly so; and that today he knows he is inefficient, though he does not generally know this to the full extent; and that being an American, he is quick to learn and to act, and he desires help. This he can obtain by means of these Industrial Fellowships.

The practicability and value of these Fellowships come from the fact that they truly mirror the spirit of the times, which is steadily and inevitably doing away with the old age of destructive competition and placing in its stead an era of sympathetic co-operation; for men have discovered that they can do together what they could not do in conflict.

From the standpoint of the industrialist this arrangement is an immense privilege. The extraordinary facilities and powers which arise therefrom give him results which cannot be otherwise obtained, and the responsibility for obtaining these results is shifted from the officials of the company, who in most instances are wholly amateurs.

Mutual Benefits to Manufacturers, Universities and Public.

When the young men who are conducting the experiments pass over to the corporations, the Universities do not lose interest in them or in the corporations; and the result is becoming apparent that through this arrangement industrialists may learn how to apply science to practical ends. Wholly unexpected and valuable relations have also developed as the number of Fellowships has increased, in the way in which these Fellows are able to help one another; and it seems that, as their number increases, this power of discreet mutual helpfulness increases in what may be called geometrical progression. It will be understood that personal integrity is a *sine qua non* to election into these Fellowships, and hence it is in a certain sense a fraternity.

With the increase in the number of Fellowships, there has appeared an increase of mutual helpfulness of the constituent corporations one to another, with striking results. Although these corporations do not know one another, as nearly all desire no publicity in the establishment of a Fellowship, yet the business of all of them passes through the office of the Director, and remarkable opportunities for helpfulness appear and are taken advantage of, some of these opportunities being for general helpfulness to the corporations quite outside of the actual direct business of the Fellowships.

It may be said, further, that what is called in chemistry the "catalytic influence" of these Fellowships is already beginning to be felt in regard to the industrialists of the country, and as the number increases, it may be reasonably

predicted that their influence will leaven the whole loaf of American industry. As a matter of fact, they have proved to be a most efficient ferment.

The public is assured of benefit from every one of these investigations, the results of which will be published within reasonable time free to everyone to read and improve upon. While patents may be taken out at any time, as is the right of every human being, it is not generally understood as it should be, that the results of scientific investigation can reach the public only through the industrialists. Röntgen took out no patents on his discovery of the X-rays, but he did not give this discovery to the people, for it could only go into medical practice by the use of X-ray bulbs, and these were manufactured and improved by various corporations through whose factories they went to the people. These corporations, naturally and not at all improperly, placed on these X-ray bulbs all that the trade would bear. The fact that Röntgen took no money for his research simply added that much to the corporations concerned; his generosity did not make the slightest difference in what the people paid. But while industrialists may come and industrialists may go, every new significant fact hangs on forever as a permanent gift to the human race in its struggle for that unknown goal towards which it is proceeding.

A Proper University Function.

There can be not the slightest question that the establishment of these Fellowships is properly a University function, for the objects of every University worthy of the name are three:—(1) the adequate instruction of the young men and women who frequent its halls; (2) the creation of knowledge, both pure and applied; (3) the dissemination of knowledge, both pure and applied, and the rendering of service through such to its outside environment. This tripartite ideal is not to be questioned, nor is any one factor of the three any more important than the others. The University which does not devote itself to research, both pure and applied, is a dead limb on the tree of our civilization, for without research it can neither teach nor be of service. Researches carried on in accordance with these Fellowships result in new knowledge, both pure and applied. When the researches are ultimately published, it will be found that each and every one has increased the sum of human knowledge quite outside of practical ends, though the latter function does not render them any the less valuable.

New useful knowledge obtained mainly at the expense of a private corporation is surely as valuable to the human race as the academic knowledge obtained through the expenditure of millions on the part of private benevolence. Through these Fellowships a University fulfils its educational function. It can take the best brains and training of the whole country, and form them, through notable and useful achievement, into the highly specialized service which modern manufacture and the human needs of modern men require. No one who has met the young men constituting the staff of these industrial Fellowships would for an instant doubt that they would grow into men of power and influence for good. It must be remembered that they are trained men, fully half of them having already their degree of Doctor of Philosophy from the

great Universities, and that the University in giving them the opportunity of applying themselves to these highest and noblest ends is doing the highest University service.

Financial Support by Manufacturers.

Various corporations, mostly eastern, have within two years placed the sum of $26,850 with the University of Kansas for the support of eleven Fellowships, as well as prizes, apparatus, travelling expenses of Fellows, etc. The amount placed with the University of Pittsburgh is $39,700.

The investigations cover a great variety of subjects and substances, including laundering, baking, glue, soap, cement, glass-making, optical properties of glass, waste from fruit and petroleum, enamel for steel tanks, ozone, ductless glands of deep-sea mammals, abatement of smoke nuisance, composition flooring, natural gas, and a search for a new diastase.

The Fellowship on the Chemistry of Bread gives an interesting illustration of the work. The donors of Mr. H. A. Kohman's Fellowship, the National Association of Master Bakers, in recognition of the value of his other work in behalf of the association, at the termination of his Fellowship conferred upon him all proprietary rights in his process of standardizing the large-scale manufacture of salt-rising bread. Mr. Kohman discovered the efficient bacillus for its manufacture, isolated it, grew it in large quantities, and through its use has been able to turn out salt-rising bread of beautifully uniform quality at the rate of a thousand loaves a day for over a week. He has been offered large considerations for the right of this process, and on the basis of his general work and at the request of a certain corporation he has been appointed to a new Fellow ship on bread at the University of Pittsburgh, yielding $2,500 a year. In recognition of Mr. Kohman's work, the University of Kansas conferred upon him the degree of Ph. D.

Copy of Agreement.

Agreement for Industrial Fellowship No.....

For the purpose of promoting the increase of useful knowledge, the University of (Pittsburgh or Kansas) accepts from..... having head offices at.....the foundation of an Industrial Fellowship to be known as.....Fellowship.

It is mutually understood and agreed that the conditions governing this Fellowship shall be as follows:

The exclusive purpose of this Fellowship is..... to the furtherance of which the holder thereof shall give his whole time and attention, with the exception of three hours a week, which he shall give to instructional work in the University.

The Fellow shall be appointed by the Chancellor of the University and the Director of Industrial Research; he shall be provided with a separate laboratory

and all supplies, reagents, etc., which could be reasonably expected to be in the possession of a large University, for the cost and payment of which his lectures shall be taken in lieu. The donating corporation, on its part, undertakes to co-operate with the University in this research, in providing him with its sympathy and, on prior consideration, with its factory facilities for large-scale experimentation. The Fellow shall work under the advice and direction of the Director of Industrial Research, and he shall forward periodically through the Director of Research reports of the progress of his work to.....

For the support of this Fellowship, which shall extend through a period of .....years,.....agrees to pay..... per year, payable annually in advance to the University of (Pittsburgh or Kansas), which sum shall be paid by the University in monthly instalments to the holder of the Fellowship.

Any and all discoveries made by the Fellow during the tenure of this Fellowship shall become the property of.....subject, however, to the payment by it to the Fellow of an additional consideration. This additional consideration to the Fellow shall depend upon the value of the services rendered, and shall not exceed..... The character of this additional consideration (whether royalties, stock, or what not), its amount, the time or times of its payment, shall be determined by the Board of Arbitration provided for herein. At any time during the tenure of this Fellowship the holder may, at the option of the donor, take out patents at the expense of the donor, on condition that at the time of making application therefor he assigns all his rights to the donor under the conditions of this Agreement.

At or before the expiration of the Fellowship, the business services of the Fellow may be secured by the donor, for a period of three years, on condition that the terms of such service are satisfactory to the parties at interest.

In the event of any disagreement between the donor and the holder of this Fellowship, it is understood and agreed that such disagreement shall be settled, in so far as the dispute relates to matters of fact, by a Board of Arbitration, consisting of a Representative of the University, a Representative of the Donor, and a Third Person whom these two shall select, that the decisions of this Board shall be binding upon the parties at issue, and that they shall obtain such decision before having recourse to the courts.

It is also understood and agreed that during the tenure of this Fellowship the holder may publish such results of his investigations as do not in the opinion of the donor injure his interests, and that, on the expiration of the Fellowship, the holder thereof shall have completed a comprehensive monograph on the subject of his research, containing what both he and others have been able to discover. A copy of this monograph shall be forwarded to..... .....and a copy shall be signed and placed in the archives of the University until the expiration of three years from that date, when the University shall be at liberty to publish it for the use and benefit of the public. In the event that, in the opinion of the company, publication three years after the termination of the Fellowship would unduly injure its interests, the corporation concerned is at liberty to appeal for an extension of time to the Board of

Arbitration provided for herein, which, after consideration of this appeal, is at liberty to extend the time of publication to a period which, in its belief, conserves the interests of all concerned.

Dated: Signed on Behalf of the University of (Pittsburgh or Kansas)

....

Dated: Signed on Behalf of.....

....

EXTRACTS FROM DR. DUNCAN'S PAPER*.

A careful reading and re-reading of this agreement will make it evident that it relates to four different factors, and the degree to which it harmonizes with these different factors determines its acceptability and its chance of becoming a permanent relation.

These factors are:

(*a*) The University.
(*b*) The Company.
(*c*) The Public.
(*d*) The Researcher or Researchers engaged.

(*a*) *The University.*

The University is fulfilling its function in increasing the sum of knowledge; the fact that it is useful knowledge does not make it any the less valuable. Furthermore, the right to publish such knowledge is assured to the University under the agreement. An additional advantage lies in the large teaching force which, in accordance with the agreements, is provided for gratuitous instructional service in teaching chemistry. Still another advantage to the University lies in the relation of this system to its graduate school. Many of the "Fellows," as they are called, already hold graduate degrees; others, junior Fellows, hold Fellowships which are advisedly provided for young men who have just graduated from their college and who are men of promise. They are carefully chosen from the best Universities and constitute, naturally, a strong element in a graduate school.

(*b*) *The Company.*

From the standpoint of the company, the system has gone past the experimental stage and now unquestionably constitutes a privilege; it has been demonstrated over and over that, working in accordance with this system, it is possible to accomplish results that cannot otherwise be obtained. And this is but reasonable.

The University is provided with an equipment for experimentation immeasurably larger than that in the possession of any but the fewest factory laboratories.

Equally important are library facilities, without which no research can progress. The University, as a matter of course, is in possession of the stores of past and contemporary scientific literature; factories, on the contrary, with, let us say, half a dozen exceptions, are barren of such; factory sites are not placed with a view to library facilities, and yet the lack of such facilities is undoubtedly a contributing cause to the normal failure of factory research.

Still again, the University is in possession of large and important consultat e facilities—mathematical, physical, engineering, bacteriological, etc.—and these are, of course, freely offered to the chemical researchers working under this system.

Finally, there is about university work, as differentiated from the factory, freedom from interference, correct judgments concerning progress, and an atmosphere sympathetic to research.

All these advantages, laboratory, library, consultative, and inspirational, together with the supervision and administration of these Fellowships, the University offers gratuitously to any company having important problems offering a reasonable chance of solution, and it undertakes, as well, to surround these researches with necessary secrecy.

(*c*) *The Public.*

The public is largely advantaged through this system. No discovery can go to the public as a useful actuality of achievement except through some company, or, to use what in these days

*"Industrial Fellowship: Five years of an Educational Industrial Experiment," by Robert Kennedy Duncan, Sc.D., in the Journal of the Franklin Institute, January, 1912.

is an invidious term, some *corporation*. Corporations may be good or bad, or both, and the people of this country may be depended upon ultimately to take care that they are made subservient to the public good; but every useful and significant fact is a permanent good to the human race. Even today, if manufacturing waste were eliminated and full advantage were taken of significant contemporary discovery, shorter hours of labor would obtain and human need would vanish; in fact, it may be said that never until such a condition does obtain shall we pass out of our materialistic, neurasthenic civilization.

(*d*) *The Researchers.*

For the Fellows, the young men engaged in these researches, the opportunites are unique. If they do not already possess their Ph.D., they may proceed for it in the University, using as their dissertation such portion of their research as we may permit; they are provided with a stipend such as they can show that they deserve; they are given every opportunity for genuine achievement; and, what is more, a full recognition of such achievement; and finally, if they succeed in a practical way, they are assured through their bonus of a substantial, material reward.

A full list of these Fellowships as so far established in both universities, together with the subjects of Research, etc., is herewith appended.

University of Kansas Fellowships in order of Acceptance by University of Kansas.

Fellowships marked * have been completed.

I. **Laundering.*

$500 a year for 2 years.
Additional consideration 10 per cent. of net profits.
Fellow: Fred. Faragher, A.B.
January 29, 1907.

II. **Diastase.*

$500 a year for 2 years (continued 3rd year).
10 per cent. of gross profits.
Fellow: Ralph C. Shuey, B.S. (U. of Kansas).
June 14, 1907.

III. **Bread.*

$500 a year for 2 years.
Additional consideration.
Fellow: H. A. Kohman, A.B. (U. of Kansas).
April 27, 1908.

IV. **Casein.*

$500 a year for 2 years.
10 per cent. of net profits.
Fellow: E. L. Tague, A.M.
April 27, 1908.

V. **Petroleum.*

$1,000 a year for 2 years.
10 per cent. of net profits.
Fellow: F. W. Bushong, Ph.D.
April 27, 1908.

VI. **Enamel.*

$1,300 a year for 2 years.
Fellows: A. J. Weith, B.S.
F. P. Brock, B.S.
September 10, 1908.

VII. *Glass.*

$1,500 a year for 4 years.
10 per cent. of net profits.
Fellow: E. Ward Tillotson, Ph.D.
March 9, 1909. (Now in its fourth year).

VIII. **Cement.*

$1,500 a year for 2 years.
Additional consideration.
Fellow: J. F. MacKey, Ph.D.
March 9, 1909.

IX. *Varnish.*

$1,500 1st year; $2,700 2nd year; $3,900 3rd year.
Additional consideration.
Fellow: 1st year, L. V. Redman, Ph.D.
2nd year, L. V. Redman, Ph.D., Senior Fellow,
A. J. Weith, B.S.
F. P. Brock, B.S.
November 10, 1909. (Now in its fourth year.)

X. **Borax.*

$750 a year for 2 years.
Fellow B. C. Frichot, B.S.
November 29, 1909.

XI. **Ductless Glands of Deep-sea Mammals.*

$1000 a year for 2 years.
Additional consideration.
Fellow: E. R. Weidlein, A.B.
March 1, 1910.

XII. **Vegetable Ivory.*

$2,750 a year for 2 years.
$2,000 bonus.
Fellow: J. P. Trickey, A.B. (New Hampshire College).
June 3, 1910.

XIII. *Petroleum.*

$2,750 a year for 2 years.
$,000 bonus.
Fellows: F. W. Bushong, Ph. D. (Senior).
J. W. Humphreys, B.S.
April 26, 1911.

XIV. **Gilson'te.*

$750 a year for one year.
$2,000 bonus.
Fellow: W. E. Vawter, B.S. (U. of Kansas).
April 26, 1911.

XV. *Fats, Hardening of.*

$1,300 a year for 2 years.
49 per cent interest.
Fellow: E. O. Rhodes (U. of Kansas).
Sept. 19, 1912.

XVI. *L ather-Scrap.*

$1,200 a year for 2 years.
10 per cent interest.
Fellow: R. Phillips Rose, A.B. (U. of Ohio).
October 22, 1912.

XVII. *Copper.*

$1,800 a year for 1 year, $500 a paratus fund.
Additional consideration.
Fellow: E. R. Weidlein, A.M.
November 11, 1912.

XVIII. *Copper.*

$1,000 a year for 1 year.
Additional consideration.
Fellow: G. A. Bragg, B.S. (U. of Kansas).

University of Pittsburgh Fellowships in Order of Acceptance by University of Pittsburgh.

I. *Baking.*

$750 a year for 2 years.
Additional cash bonus of $2,000.
Fellow: Wilbur A. Hobbs, A.B. (U. of Kansas).
November 30, 1910.

II. *Abatement of the Smoke Nuisance.*

$12,000 first year; $15,000 2nd year.
Additional consideration 49 per cent, collective interest.

Staff in Charge.

Fellows:—

R. C. Benner, Ph. D. (U. of Wis.) (Chief Fellow).
W. W. Strong, Ph. D. (Johns Hopkins), Physicist.
J. A. Beck, LL. B. (U. of Pittsburgh), Attorney.
H. H. Kimball, Ph. D. (Geo. Wash. U.), Metereologist.
A. B. Bellows, B.S. (Mass. Inst. of Tech.), Engineer.
O. R. McBride, B.S. (Purdue U.) Engineer.
A. F. Nesbit, B.S. (Mass. Inst. Tech.) Electrical Engineer.
J. J. O'Connor, Jr., A.B. (Univ. of Pittsburgh), Economist.
E. H. McClelland, Ph.B (Lafayette College), Bibliographer.
J. F. Clevenger, M.S. (Ohio State U.), Botanist.
C. H. Marcy, Bacteriologist.
J. E. W. Wallin, Ph.D., Psychologist.

Advisory Staff.

Oskar Klotz, M.D., C.M. (McGill U.) Senior Fellow.
E. W. Day, A.M., M.D.
W. C. White, M.D.
R. T. Miller, Jr., M.D.
W. W. Blair, M.D.
B. A. Cohoe, A.B., M.D.
S. R. Haythorn, M.D.
W. L. Holman, M.D.
E. B. Lee, Architect, Senior Fellow.
Richard Hooker, B.S.
C. T. Ingham.
Richard Kiehnel.
Carlton Strong.
K. K. Stevens, B.S.
November 30, 1910; revised, June 24, 1911.

III. *On the Relation of the Pots to Glass in Glass-Making and the Elimination of "Strea."*

$1,500 a year for 2 years. . . . .
Additional cash bonus of $2,000.
Fellow: Samuel R. Scholes, Ph.D. (Yale University).
January 25, 1911.

IV. *Baking* (Wholly Independent of but with Acquiescence of No. 1).

$4,750 a year for 2 years.
Additional consideration of $10,000.
Fellows: Henry A. Kohman, Ph.D. (U. of Kansas), Senior Fellow.
Charles Hoffman, Ph.D. (Yale University).
Alfred E. Blake, A.B. (New Hampshire College).
January 25, 1911.

V. *Glue.*

$1,200 a year for 2 years.
Fellow: Ralph C. Shuey, B.S. (U. of Kansas).
February 3, 1911.

VI. *Soap.*

$1,200 a year for 2 years.
Fellow: Paul R. Parmelee, B.S. (U. of Kansas).
February 3, 1911.

VII. *Utilization of Fruit Waste.*

$1,000 a year for 2 years.
Additional consideration of $10,000.
Fellow: F. Alexander McDermott (Geo. Wash. University).
May 12, 1911.

VIII. *Composition Flooring.*

$1,500 a year for 2 years.
1 per cent of sales for 5 years.
Fellow: R. R. Shivley, B.S. (Okla. A. and M. College).
August 15, 1911.

IX. *Crude Petroleum.*

$10,000 a year for 2 years.
Collective interest of 10 per cent.
Fellows: Benjamin T. Brooks, Ph.D. (U. of Göttingen), Senior Fellow.

X. *Natural Gas.*

$4,000 a year for 2 years.
5 per cent of industrial results.
Fellows: R. H. Brownlee, Ph.D. (University of Chicago). Senior Fellow.
Roy Uhlinger, M.A. (U. of Pittsburgh).
September 22, 1911.

XI. *Cement.*

$1,800 a year for 2 years.
$10,000 additional consideration.
Fellow: J. F. MacKey, Ph.D. (University of Toronto).
September 22, 1911.

XII. *Foods, Problems Related to the Manufacture of.*

$5,000 a year for 2 years.
$10,000 additional consideration.
Fellows: Clarence C. Vogt, Ph.D. (Ohio State University). Senior Fellow.
Harry P. Corliss, B.S. (New Hampshire College).
W. E. Vawter, B.S. (U. of Kansas).
May 20, 1912.

XIII. *Fats and Oils, Bleaching of.*

$1,800 a year for 2 years.
Fellow: Leonard M. Liddle, Ph.D. (Yale University).
May 22, 1912.

XIV. *Effect of High Potential Electricity on Chemical Reaction.*

$1,000 a year for 2 years; $300 apparatus fund.
Additional consideration.
Fellow not yet appointed.
October 28, 1912.

XV. *Discovery of Methods of Coating Steel or other Metals with Copper or other metals.*

$1,500 a year for 1 year; $500 apparatus fund.
Additional consideration $10,000.
Fellow: C. L. Perkins, B.S. (New Hampshire College).
December 4, 1912.

XVI. *Copper, Extraction of from its Ores and from Copper "Tailings."*

$1,500 a year for 1 year.
Teaching Fellow: Howard D. Clayton, B.A. (Ohio State University).
December 1, 1912.

A Basis of Progressive Success.

After the system had gotten well under way it became possible and advisable to establish Multiple Fellowships, as differentiated from Individual Fellowships. Multiple Fellowships employ the intensive services of several men under the immediate direction of a Senior Fellow, who is responsible for his juniors to the Director and his Associate. An Individual Fellowship relates to one Fellow only, who is responsible directly to the Associate Director, and through him, to the Director. Such Multiple Fellowships, for example, are K9, K13, P2, P4, P9.

While the time has not yet arrived in any one case for the publication of results, it may be said that these results on the whole have been most gratifying; indeed, the system could not have survived, much less grown, except on the basis of progressive success. Quite apart from industrial results involving temporary secrecy, it has been found possible from time to time to publish papers of academic interest; such, for example, are Tillotson's papers on the "Surface Tension of Molten Glass," Weidlein's work on "Adrenalin," or Bushong's paper on "Iso-naphthenic Acids."

From the industrialists themselves we have received a generous, broadminded trust and co-operation and the donation of many thousands of dollars' worth of apparatus in recognition of our progress.

The Fellows engaged in these researches, while they have been drawn from many different Universities and other sources, have shown a complete understanding of the high trust which they hold and have developed a spirit of mutual helpfulness and an *esprit de corps* that is invariably a subject of favorable comment from visiting colleagues.

During the five years of actual development that this scheme has undergone, any inherent weakness must surely have appeared. It is most gratifying, then, at the conclusion of this paper, to state that none of us engaged in this work is aware of any such weakness. We look forward with confidence to the ultimate establishment of this system of Industrial Fellowships as a permanent relation between Industry and Learning.

CHAPTER XII: VOCATIONAL GUIDANCE.

INTRODUCTORY.

In the administration of education, as planned to make the schools more effective in preparing the pupils for their vocations, organized efforts have been introduced for the purpose of guiding them in respect to occupation. Stress is laid upon the desirability of impressing them with a sense of the importance and dignity of work of all kinds as the foundation of individual and social welfare. Efforts are made, in many of the leading centres, to furnish information regarding trades and occupations and to give the pupils such assistance as may be furnished by a Public Body towards preparing them for such places and afterwards helping them to obtain suitable situations.

Vocational Guidance does not mean only helping boys and girls to find work, that is work of any kind. It does mean helping them to find the kind of work which they are best fitted by nature and training to do well. It does not mean choosing vocations for them. It does mean bringing to bear on the choice of a vocation organized information and organized common sense. Boys and girls choose occupations often from the ease by which fairly good wages can be obtained, without regard to whether the occupation leads towards satisfactory employment in adult life.

The body politic or society gains hardly anything by the labour of thousands of its children at the most important period of their growth and development, mainly because they are not guided into the occupations for which they are best fitted. In cases like this the employer is often as great a loser as the boy or girl who works for him. Discontent with the job, more than the wages from it, will make a boy skip from one place to another. That leads to the destruction of the sense of responsibility and the loss of any habit of persevering application from a sense of duty.

Much Co-operation is Necessary.

The co-operation between the teachers in the Elementary Schools when the children leave them, and those in charge of the Continuation Schools is desirable. It seems equally desirable that there should be some definite arrangement or connection between the Day School and the Continuation School on the one hand, and the trades and industries on the other.

The content of the Courses of Study and the kind of work done in the Elementary Schools during the final two years have a good deal to do with shaping the preferences of pupils, and directing their tastes and ambitions.

Attendance at Continuation Classes enables the School Authorities to co-operate with parents and employers toward discovering the aptitudes and abilities

of the pupils. An indication is thus obtained of the occupations for which they are best fitted, and they can be helped to get a start in them.

In this connection the reports of Labor Unions and Trade Organizations help to prevent an excessive number of young people taking Industrial Training or Technical Education for particular industries, where opportunities for employment are already limited.

In cities in England and Scotland the work of Vocational Guidance is carried on by the School Authorities in co-operation with the juvenile branch of the Employment Bureau; though the administration of these two public services is in other respects distinct and separate.

Because of the comparative newness, in Canada, of public activity in this connection, extended reports are hereafter presented indicating what is done in one place in the United Kingdom, two places in the United States and one place in Canada. Attention is also called to the remarkably effective work being done in a similar connection at Halifax, England. That reveals notable success in securing attendance at Continuation Classes of boys and girls who have left the Day Elementary School.

Necessarily in reporting on such a matter the material presented is taken from official or other authoritative sources. That regarding Edinburgh is presented first and is taken from one of the most excellent reports by Mr. McNally, Organizer of Continuation Classes, the official who is more directly responsible than any other for the work of the Educational Information and Employment Bureau.

SECTION I: EDINBURGH EDUCATIONAL INFORMATION AND EMPLOYMENT BUREAU.

The Education (Scotland) Act, 1908, which became operative on 1st January, 1909, empowered School Boards to maintain or combine with other bodies to maintain "any agency for collecting and distributing information as to employments open to children on leaving school" (Section 3, subsection 5). Thus it became possible for School Boards to use, in their discretion, moneys from the School Fund for this important purpose, and the Scotch Education Department have in two circulars, dated 27th August 1909 and 10th August 1910 respectively, pressed upon all the Scottish Boards the advisability of taking action. No special grant of money was, however, allotted for such purposes. It should be noted that the Act refers to information as to employments. The phrase might or might not be held to cover the detailed work of registration for specific vacancies.

The opening of the Edinburgh Bureau, which had been deferred until the Education (Scotland) Act came into force, took place in September 1909. The work of organizing and superintending the Bureau was entrusted to the Organizer of Continuation Classes, who had been for three years in close touch with employers in the city. It was felt that the further education of adolescents is

closely related to their employment, and that the operations of the Bureau, if properly directed, would exercise a strengthening effect on the link between the Day School and the Continuation Classes. This belief has been amply justified by the distinct increase in the number who proceed direct from the Day School to the Continuation Classes.

THE FUNCTIONS OF THE BUREAU.

The functions of a juvenile employment organization are briefly as follows:—

1. Advising juveniles as to the pursuits for which they are by ability, taste, character and education suited.
2. Informing juveniles as to the opportunities which exist in the various occupations.
3. Collecting and promulgating general information in regard to industrial conditions.
4. Registration, *i.e.* bringing into contact the employer, with a specific position to offer, and the juvenile suited for and desiring such a position.
5. The supervision, in certain cases, of the juvenile after he has obtained employment, so that he is induced to take advantage of all educational facilities pertinent to his work, and is advised as to the various steps in his industrial career.
6. Keeping the system of 'further education' in real touch with the industrial needs of the locality.

Educational Census.

In the summer of 1910 an Educational Census was taken of the children and young persons in the City of Edinburgh with a view to determining two main points—(*a*) the actual number of young persons for whom Continuation Class arrangements should be made; (*b*) the nature of the industries of the various districts in which these young persons were then employed. The census was confined to houses of a rental of £30 per annum and less. It was ascertained that on 1st June, 1910, the number of young persons between 14 and 18 years of age was 14,988, and that of these 3,366, or 22.4 per cent, were in attendance at Day Schools; 3,948, or 26.6 per cent were attending Continuation Classes or other institutions for further study not including Day Schools; 7,674, or 51 per cent, were not taking advantage of any facilities for further study.

Calculated on the basis of the 1901 Census, the total number of young persons between 14 and 17 in Edinburgh in 1910 may be stated to be 19,094, the number receiving instruction during the day, 5,021, and the number attending Continuation Classes, Central Institutions and Private Schools, 5,758. Apparently then there were on 1st June, 1910, in round numbers, 8,000, or 43.5 per cent. of the total population between 14 and 17, who were not in attendance at either Day or Evening Classes. Almost 1,000 of these have since been enrolled in the Continuation Schools.

There are 43 occupations in the city in which more than 50 workers between the ages of 14 and 18 are engaged. These important groups of industries will be carefully surveyed, with a view to showing to what extent provision has already been made in the Continuation Schools for giving instruction in the subjects which are directly related to them, and what further organization is required to meet the necessities of occupations still unprovided for. Valuable assistance in this connection will be given by the Sectional Committees of the Advisory Council.

Continuation Classes Committee.

It was at first intended that the Bureau should be under the charge of a Standing Committee of the Board consisting of seven members, but on 21st April, 1909, the number of members was altered to five. Two years' actual experience of this arrangement has led the Board to see the necessity of conjoining the management of the Bureau and of the Continuation Classes. These two organizations deal with the same problem, the future of the child after he has left the Day School, and as the Continuation Classes are now expected to provide instruction having a direct bearing upon the crafts and industries of the district, the Board decided to form a special committee to deal with all matters relating to the conduct and control of the Bureau and the Continuation Classes.

Advisory Council—Sectional Committees.

Associated with this Committee, which is called "The Continuation Classes Committee," there is an Advisory Council comprising representatives of public bodies, trade associations, employers and educational experts. It is the duty of the Advisory Council to give advice to the Board on all matters connected with the education required for the various trades and occupations in the city and on the conditions of employment. In order that the attention of each member may be concentrated on the industry with which he or she is connected, eighteen Sectional Committees of the Council have been formed to deal with the following subjects, viz.:—

1. Printing.
2. Engineering.
3. Brassfinishers' work.
4. Tinsmiths' Work.
5. Moulding.
6. Building Construction.
7. Plumbers' Work.
8. Carpentry and Joinery.
9. Cabinetmaking.
10. Upholstery.
11. French Polishing.
12. Baking and Confectionery.
13. Tailors' Work.
14. Plasterers' Work.
15. Art.
16. English.
17. Commercial Subjects.
18. Domestic Subjects.

The Duties of Sectional Committees.

The duties of these Sectional Committees are as follows:—

(*a*) To visit the particular classes with which they are chosen to deal.

(*b*) To offer suggestions to the Board as to the equipment and schemes of work of those classes, the qualifications of teachers, and as to further means calculated to increase interest on the part of the workers concerned.

(*c*) To advise as to the general working of the machinery for placing young persons in employment and as to the conditions obtaining in the various industries.

(*d*) To make an annual report to the Board on all these matters.

The work of the Sectional Committees has been carried on with much earnestness, and valuable reports have been furnished to the Board. In this way the workshop, the counting-room, and the business establishment are brought into close contact with the school, and a definite practical bent is given to the instruction.

The following extracts are taken from the Report of the Continuation Classes Committee for the Session of 1910-11 :—

CO-OPERATION OF EMPLOYERS.

A special report on this all-important aspect of Continuation Class development has been prepared by the Organiser, and copies may be had by employers and education authorities on application to the School Board Offices. Attention may be directed to the following quotations as showing the response which employers make year after year to the Board's appeal for co-operation, and the variety of ways in which this co-operation grows:—

"All that has been said in previous reports as to the admirable spirit with which the Board's advances are received, and as to the readiness with which all reasonable requests are granted, still holds good. Through the activities of the Advisory Council of the Educational Information and Employment Department, employers are being brought into close personal touch with the work of the Continuation Classes, with the natural result, that, as their interest increases, their desire to develop the organisation grows, and they come to feel that they themselves are a most necessary part of the whole system."

"Within the last two years valuable help has been given by certain employers or their representatives in the drafting of schemes of work for new trade classes, and in the drawing up of the equipment and apparatus necessary for the proper teaching of these classes. In this way the Board have learned what can be taught in the trade classes to supplement without substituting what is done in the workshop."

"Further, in the work of the Sectional Committees of the Advisory Council employers have taken a prominent part, not only in visiting the classes but also in drawing up reports and suggestions to the Board. It is believed that these Sectional Committees will help to raise the whole standard of trade and technical instruction and will do much to remove the reproach that technical education in this country is neither up-to-date nor in line with the practical needs of the leading industries."

ADVERTISING.

A copy of the prospectus was, as formerly, sent to every pupil who had left the Day School during the previous session. The methods adopted during the four previous years for advertising the classes were continued. A throughly systematic and comprehensive visitation of employers was carried on by the Organiser, who, in the course of five weeks, made 808 calls and arranged for 91 meetings of work-people, nearly all of which were addressed by a Member of the Board as well as by the Organiser. In the course of his report on this work the Organiser states that each year all the chief employers are visited, and an effort is made to break fresh ground so far as the smaller shopkeepers and less important business people are concerned.

A detailed statement of the other methods adopted for advertising the classes is given in Appendix A of the Organiser's Report. The following steps taken for the first time in the past session may be specially mentioned, viz.:—(1) Evening meetings of leaving pupils and of their

parents were addressed in the various schools by Members of the Board during the month of February. (2) A special circular letter was sent in September to all young persons between 14 and 18 years of age who, according to the census taken by the Board's officers in June 1910, had not previously enrolled in a Continuation Class. (3) The Head Teachers were asked to use every reasonable means for putting into effect in their respective districts the suggestions of the Scotch Education Department as set forth in Circulars 426 and 433. (4) Special circular letters were issued to the employers in those trades in connexion with which arrangements had been made for giving instruction for the first time.

Informational Cards are Passed Around.

The action is as follows:—Two months before the fixed date for leaving, each Headmaster fills up, in respect of all pupils who will leave, cards giving particulars of age, physical condition, ability, attainment and employment desired. The card also contains the opinion of the teacher as to the occupation for which the pupil is suited, notes as to proposed employment and further education, and spaces for general remarks. These cards are sent in to the Education Officer, who goes through them, making such summaries of educational and physical facts as may be desired. The cards are then passed on to the Exchange Officer, who files them in a cabinet. Smaller cards containing information as to age, record of attendance and behaviour, attainments in English, Arithmetic and Intelligence, length of time in Supplementary Course, and date of gaining Merit Certificate, are given to the pupils themselves when they leave School.

Parents are Invited.

Meanwhile the fixed date approaches. The parents of all pupils leaving school are invited to an evening meeting at the school, with tea as an inducement. They are addressed by Members of the Board and by the teachers, and stress is laid on two points, viz. (*a*) that though their children are leaving school, further education of the kind appropriate to their work should be pursued; (*b*) that the children or their parents or both should call at the School Board Office some evening to receive such detailed advice as could not be given at a general meeting, and to register for employment. To these parents and also to those who do not come to the meetings a circular letter is sent. The meetings are attended by about 80 per cent of the parents concerned.

The Candidate is Interviewed.

The consequence is that large numbers of boys and girls come to the Board Office to follow up the card. The candidate first goes to the Exchange Officer's room, and receives his card stamped with reference number of the trade desired. He passes to the Education Officer's room and has a talk about his aims, his further education, and the suitability of the career for which he has expressed a preference. The parents are strongly advised to be present at this interview. The boy or girl then passes back to the Exchange Officer's room, and is definitely registered as a candidate for a particular kind of employment. The cards of

those who have made this personal application are separated from the others, and they receive priority in filling vacancies.

The Contacts with Employers.

The other side of the process now falls to be described. A circular letter is sent to all large employers in the City, informing them of the joint arrangement and requesting their co-operation. When the employer writes or telephones asking for candidates for a certain position, the register of personal applicants is first consulted (and in default of that the remainder of the register), and three or four of the most likely candidates are sent along to the employer for interview. Details of the request and also of the candidates are entered on the employer's card. Beyond the two sets (both of which are filed by the Exchange Officer, but are always open to the inspection of the Educational Officer), no other registers are kept. In the placing of pupils who have left school at either of the last fixed dates, the two officers act jointly, and when any difficulty arises as to those who left prior to those dates, they render each other whatever assistance they can.

Periodic renewal by the pupils is desirable if their names are to be kept on the personal application register.

Both the Educational Officer and the Exchange Officer make systematic visits to employers, the former to study industrial conditions, to enlist sympathy with and support for the further education of the employees, and to gain ideas for improving the Continuation Class system; the latter to bring to the employers' notice the facilities for securing suitable workers through the Exchange.

The nature and scope of the work which has been done by the Bureau since its opening on 6th September, 1909, as well as the extent to which its services have been utilised by employers, and those seeking information and advice as to further education, are fully brought out in the following statement issued by the Director in May, 1911, viz.:—

Director's Statement regarding the Work.

	For month of Apr. 1911.	Total since opening (6th Sept. 1909.)
Number of pupils reported as leaving school at or since Summer Holidays, 1909, and concerning whom Bureau Cards have been received	14	5,670
Number of above who have stated their intention to enrol in Continuation Classes	6	3,266
Number of above 5,670 who have made personal application to the Bureau for employment	115	1,920
Number of above 1,920 who have entered on an occupation.	140	1,209

SECTION 2: VOCATIONAL GUIDANCE IN NEW YORK CITY.

A statement of the situation as it exists in the United States was presented in the Report of the Commissioner of Labor for 1910 on Industrial Education. It contains in greater detail than the notes of the Commission the information which was obtained in the two cities of New York and Boston. Consequently the following extracts are taken from it with grateful acknowledgment of their service.

Movements to promote vocational guidance have been undertaken in New York, Boston, Chicago, Cleveland, Philadelphia, Pittsburgh, St. Louis, and several other cities. In some cities, as New York, this work developed directly from the effort to place pupils who were ready to leave or obliged to leave the public schools. In others, as Boston, the features of guidance and counsel have from the first been prominent. The work in these two cities will be described at some length, as the newness of the subject and the present great interest in it seem to justify considerable detail.

As already stated, in New York this work began in an attempt to place pupils, from which effort other features of vocational guidance have developed. The High School Teachers' Association, through its students' aid committee, has taken the lead, its work in this direction being the outgrowth of the efforts of one teacher to help his students in choosing and securing work suited to their abilities and offering some prospect for the future. By 1908 in each day and evening High School there was a teacher or a committee of teachers to help students not only in deciding what vocation to choose, but in learning how to enter it. This work was purely voluntary on the part of the teachers and was carried on in addition to their regular duties.

Objects of Students' Aid Committee.

At this time the Students' Aid Committee stated its objects as follows:—

In order that local committees and the teachers of the several schools may be better prepared to help pupils who leave school to fit themselves to their environment, the general Committee has planned to collect and make available information regarding—

(1) The necessary and prescribed qualifications for entering the skilled trades and learned professions in this city.

(2) The opportunities which are furnished to the young people of this city for acquiring these necessary qualifications, the time usually required, and the expense to the individual of qualifying himself.

(3) The restrictions which are placed by labor unions and professional bodies upon candidates who desire to enter the several skilled trades or professions.

(4) The average remuneration and the relative permanency of employment which a properly qualified person of either sex may expect in each of the skilled trades, the learned professions, and the commercial pursuits in which young people are usually employed.

In order to furnish this information in convenient form, the Committee undertook the preparation of a series of vocation leaflets, of which a dozen or more have appeared, with such titles as "Choosing a Career," of which there are two issues, one for boys and one for girls; "Openings for Boys in Machine Shops," and "The Vocational Adjustment of the Children of the Public Schools." These pamphlets are definite and practical. The two on choosing a career contain, in addition to concise information respecting the various pursuits, lists of books, reports, and magazine articles dealing with the different occupations, and lists of institutions giving special training to boys, to girls, or to both sexes, their location, requirements for entrance, etc.

These pamphlets are utilized throughout the High School course in directing the students' attention to the importance of choosing a vocation and preparing for it. From the beginning of the course every effort is made to rouse the students' interest in this matter. In four of the High Schools the pupils are definitely required to prepare regular plans for their future careers, including a study of their own capacities. In others, while not so definitely required, this is strongly urged. One of the plans outlined for such work is as follows:

Suggestions.

1. Let the student select an occupation, find some acquaintance engaged in that work, secure an interview, and write out the results of the interview as if for a newspaper. It will add to the interest if several members of the class have the same topic.

2. Let the student select an occupation for himself and plan for himself a career.

3. Let suitable questions for the debating society be so framed that pupils will discuss the opportunities in one line of work as against the opportunities in another; the requirements for success in one line, as against the requirements in another; the rewards of a profession as against the possible returns from a trade or a business.

4. Let the pupils select a line of work in which they are interested and write a review of one of the books of reference dealing with that occupation.

5. Let the student select some particular line in which he may be interested, and write an answer to some newspaper advertisement for help in that line.

A Plan for a Career.

In writing a plan for a career a student should set forth:

I. (*a*) His preferences; (*b*) the expressed wishes of his parents and friends in regard to his future.

II. (*a*) His own reasons for his choice; (*b*) reasons in favor of or against his choice which were gleaned from books and magazine articles; (*c*) arguments in favor of or against his choice which were advanced by parents and friends who were consulted.

III. His personal characteristics by the aid of which he hopes to win success in his chosen vocation.

IV. The legal requirements for admission to the practice of the chosen trade or profession.

V. The schools to be attended to meet these requirements and the estimated time and expense involved in preparation.

VI. The possible rewards as stated in the authorities which were consulted.

As has been mentioned, this work has been carried on by many volunteer workers and by voluntary contributions from interested persons. By 1910 it was felt that it had sufficiently proved its usefulness to justify asking public support, and in its report for that year the Students' Aid Committee urged the formation of a central vocational bureau to take general charge and oversight. This has not yet been established, but an appropriation of $250 was granted each High School for expenses connected with the work The plan outlined by the committee is here given in full, as showing what it is felt should be the scope of such a bureau.

A Central Vocational Bureau.

I. MANAGEMENT.

A. By an executive committee composed of representatives of associations of employers, labor unions, educational, social, and church workers, or of contributors.

B. By the school authorities under the direction of the Superintendent of Schools.

II. FUNCTIONS.

A. To offer advice and direction to young people of exceptional abilities who cannot receive the necessary assistance from the vocational teachers of their respective schools.

B. To serve as a means of communication between employers and the employment agencies or vocation teachers of the several schools and colleges from which students go out to work.

C. To collect information in regard to the opportunities for workers of ordinary ability and others of exceptional training; information concerning the personal and educational qualifications required for admission into different lines of work, and concerning the tests of efficiency which are set for promotion into the different grades of the same lines of work; and information regarding legal enactments and labor-union restrictions, this information to be gathered from:

1. Associations of employers.

2. Individual employers.
3. Statistical publications and Government reports.
4. Social workers.
5. Vocational records of workers of known capacities.

D. To make available through special publications, lectures, pamphlets, and conferences, for the use of students who are to choose a vocation and also for parents and social workers, general information in regard to the opportunities which are offered in the city, and to supply committees on courses of study or on syllabi of instruction with material which will enable them to increase the vocational content of the teaching material in the several subjects of study; and to supply the employment agencies of the several schools with specific and confidential information in regard to the terms and conditions of work with particular employers.

E. To keep a registry of students of the evening, trade, and continuation schools who are prepared, because of the completion of the prescribed courses of study, for employment in higher forms of service than those in which they are engaged.

F. To assist students of high capacity to complete advanced courses of study:

1. By means of scholarships.
2. Through part-time employment.
3. Through vacation employment.

Examples of How it Works.

The work of vocational guidance has been much more developed in the High Schools than elsewhere, but it is not confined to them. In Brooklyn a number of grade teachers are counselling and following up in precisely the same manner the pupils who must leave before even entering a High School. This work is so entirely individual, however, that it is difficult to say how extensive it is.

In 1910 one of the District Superintendents, on the lower east side of New York, employed a young woman who devotes all her time to finding positions suitable for untrained boys and girls who must leave school at 14. When a pupil who has fulfilled the school requirements says that he must go to work, he is sent to this agent who, by personal interviews with him and consultation with his teacher, tries to learn his tastes, ambitions, and capacity, and to secure for him a place adapted to his abilities and needs. The agent also visits employers, inspects the conditions under which children would have to work, learns the opportunities for advancement, considers the influence of the foreman or employer with whom a child would come in contact, etc. Unless the result of her investigations is satisfactory children are not sent.

SECTION 3: THE BOSTON PLAN.

The leading organization in Boston for vocational guidance is the Vocation Bureau, but either affiliated or working in the closest harmony with it are four other organizations—the Committee on Vocational Direction of the Boston School Board, the Boston Home and School Association, the Girls' Trade Education League, and the Women's Municipal League.

Of these the Committee on Vocational Direction was formed expressly that, in co-operation with the Vocation Bureau, it might begin the work of guidance within the schools, before the pupils leave even the grammar grades. The other three are independent organizations which carry on specific work along the lines of vocational guidance as only one among varied activities.

The Vocation Bureau was the pioneer in the field, and forms a kind of inspirational center for the later comers. During the last year the three independent organizations sent representatives, by invitation, to sit with the executive board of the Vocation Bureau, that the plans, both of the Bureau and the other bodies, might be discussed and carried out co-operatively and that all might be kept informed of the progress of each. It is likely that during the coming year a plan of even closer co-operation will be worked out. It is also likely that two at least, and possibly all, of the other bodies will remove their offices for vocation service so as to make a continuous suite of offices in connection with the Vocation Bureau. Owing to this close co-operation of all interested there has been very little, if any, duplication of effort and the field has been covered with unusual thoroughness.

The Vocation Bureau.

The Vocation Bureau is an extension of the work of the late Prof. Frank Parsons, who, as educational director of the Civic Service House, organized in 1907 a bureau for the purpose of advising young men in their choice of a vocation. The present Bureau, organized June 19, 1909, represents a co-operative effort on the part of public-spirited men and women in the fields of labor, education, commerce, manufactures, and social work, to organize and put into operation a comprehensive plan of vocational advice and assistance for the children and young people of Boston. Its work is carried on by a director and an executive board of thirteen members; there is no fee nor charge of any kind for its services.

The organizers of the bureau believe that proper guidance at the critical period of adolescence will enable beginners to find themselves early and to make good in the work they are doing, and will, moreover, stimulate them to fit themselves for advancement. In return for this increased interest in their pursuit, manufacturers and business men are asked to co-operate in securing for their young employees the largest opportunities for progress in the work assigned them.

What the Vocation Bureau Does.

The Bureau does not prescribe vocations, nor is it conducted as an employment office. Its chief service is in bringing together the best occupational information and in devising the best methods of applying such information in assisting the child and its parents to make an intelligent choice of a career. At the invitation of the Boston School Board the Bureau is co-operating with the schools in outlining methods of helping pupils choose their life work and prepare for it. It is also conducting a training school for teachers and school officials who have been appointed as vocational counselors by the school department.

The activities of the Vocation Bureau fall into four general groups:

1. The maintenance of an office, centrally located, for the collection and study of information concerning the various occupations of the community. When secured, this information is classified and made public in such a way as to help young people, teachers, and parents to understand what the occupations hold out, their advantages and disadvantages, and the conditions for efficiency and success in each.

2. To make clear the need of training and educational equipment for the desirable occupations, and by advice and co-operation to prolong the school period of young people, whether by day, evening, or part-time courses, and also to secure other educational opportunities when needed.

3. To organize personal vocational counseling both for those in school and for those already at work, in order to enable them to plan intelligently for their educational and vocational progress.

4. To furnish opportunities for consultation to people of all ages, who have personal problems concerning the trades, the professions, and academic or industrial pursuits.

The first centers about the acquisition and use of the material on which counsel is based, to secure which the Bureau has undertaken the investigation of occupations open to boys and young men. Professions, trades, and different kinds of business are included. There is no bias in the Bureau's plan in favor of industrial over non-industrial pursuits, all vocations being given equal attention in the collection and presentation of facts relating thereto, but the trades and manual occupations come in for a considerable share of study.

To make these researches the Bureau employs two expert investigators, who are expected to learn what an occupation is, its conditions and openings, what it demands of a boy, what it offers in pay and advancement, what opportunities are open for securing the specific training it requires, and what the general conditions of employment are as regards health and effect upon the life of the individual. This investigation is conducted by making personal visits to firms, shops, or factories, and by consultation with employers, superintendents, foremen, employees, and labor men, and also by the use of books dealing with occupations, and of trade periodicals.

Over 100 occupations have been thus investigated and the results carefully filed for use as a basis for vocational counsel. In addition, in occupations which seem adapted to such treatment, the facts gathered are worked up into a bulletin

for the use of those interested either in choosing a vocation for themselves or helping others to make a choice. The bul'etins are not meant to furnish strictly scientific or technical treatment of the occupations, but it is intended that the information they give shall be thoroughly reliable. To this end each bulletin is carefully scrutinized, by the persons furnishing the information on the investigation cards, by an economist, a labor union official, and others.*

*It has already been indicated that this Report *re* New York City and Boston is taken from the Report of the Commissioner of Labor of the United States, 1910. The extracts are not put in small type, as is the custom in this Report, only for the reason that they may be more easily read owing to their extent.

SECTION 4: VOCATIONAL GUIDANCE OF BOYS AT WINNIPEG.

The Winnipeg Industrial Bureau is a body of public-spirited men representing twenty business organizations of Winnipeg whose object is the development of opportunities in Winnipeg and Western Canada.

This Bureau has an Educational Committee, which has definitely taken in hand the vocational guidance of boys, by means of plain talks by leading men in each trade and profession. These talks are afterwards printed and distributed to the parents by means of the scholars.

The Lieutenant Governor is taking great interest, and the whole movement is one of the Bureau's activities, called into being as a result of trying to create a good environment and outlook for the children.

The Educational Committee has a fund of $3,000 per year for paying expenses of bringing lecturers. The Trades Unions are taking an interest in the work and helping in the lecture work.

The talks are short, practical and inspiring, and deal with railway work, machinist trades, pattern making, lithographing, salesmanship, etc.

Subjects of Talks by Citizens.

Among the subjects presented to the Schools by these public-spirited citizens of Winnipeg are the following:—"The possibilities for Success in Railway Work," by Geo. Bury, Esq; "The Lithographing Trade," by W J. Bulman, Esq., of Bulman Bros. Ltd. Lithographers, Printers, etc., and President of the Winnipeg Industrial Bureau; "The Training of an Electrical Expert," by Professor E P. Featherstonhaugh, of the University of Manitoba; "Machinist Trades," by R. R. Nield, Esq , Foreman of the C.P.R Shops; "Pattern Making" by E Stewart, Esq., Mechanical Superintendent Manitoba Bridge and Iron Works Ltd.; "Salesmanship," by A. L. Struthers, Esq , representative of the Business Science Club.

Vocational Training.

The Committee has issued the Chart, shown on the following page which is hung in Public Schools, and used by Teachers, Vocational Counsellors, Parents' Associations and others interested in the Vocational Guidance of youth

WINNIPEG VOCATIONAL CHART.

TO ASSIST PUBLIC SCHOOL BOYS

To select a trade or profession.
To have a knowledge of each trade.
To understand the value of efficiency.
To understand the horror and irritation of the life of the inefficient.
To realize that the basis of their future is the "know how" of to-day, and that the basis of that "know how" they are gaining at school.
To specialize and not form the habit of changing trades for little financial gains, for time is going and they must not become men with five hungry senses and no available facility whatever.

We are having the leading men in each trade or profession visit each school and tell the boys about their trade, what it is, what it produces, what future, what wages, what a boy should know, and in short, make as clear as he can with his trade as a text the answer to opposite suggestions.
Eighteen talks have already been given and masters and business men believe a profound impression for good will result.

TO AWAKEN THE MOTHER'S INFLUENCE

And in an indirect way give her a general idea of the future possible callings of her boy.

What is said is printed in leaflet form and is taken home by the children. Being written for them the parents can easily understand, and when the mother reads the opinion of the leading men in each trade in our city, all of which will make clear the horrible future of her boy if he is inefficient, and the sure future, if he is able to fit himself, we hope the mother will not allow any little immediate gain to ruin her boy's future.

The curse of our city is that children can so easily earn money.

TO HELP THOSE ALREADY AT WORK

To awaken a desire for better ability in themselves.

To give voice to the wants of the workers educationally.

To let them see in their own trade men that possess knowledge they never dreamed of.

To create environment for the young workers by stimulating the educational interest of the older ones.

We propose to have lectures selected by unions and employers in each trade that will be entirely for that trade, but all lectures will be to show the workers what they might know, and the School Board have provided night classes and teachers for any class that can be organized.

We have now $3,000 per year to pay expenses of bringing the lecturers here, and unions and vocations generally are taking an interest.

CHAPTER XIII: WIDER USE OF THE SCHOOL PLANT.

In recent years a movement for the wider use of the School Plant has taken the form of Evening Classes, Vacation Schools, Public Evening Lectures and Social and Recreation Centres. As these have a direct bearing upon industrial efficiency an example is given of each. Many other cities might be mentioned as carrying on similar work. The four places chosen are Buffalo, N.Y.; New York City. Rochester, N Y. and Ottawa, Ont. Each represents some special feature.

SECTION 1: AT BUFFALO, N. Y.

Continuation Classes.

A word first as to Evening Classes. The first use of the school plant, in addition to the ordinary day classes, is assigned to the holding of Evening Continuation Classes. The fact that a very large percentage of the pupils in the public schools leave before they have completed the full course of the Elementary School is a reason why every effort is made to let the school serve them at least in the evenings, after they have begun to work. To attract their attendance and keep their interest, such classes provide practical instruction in subjects of recognized value to the boys and girls themselves. Those who have given attention to the subject declare that the immediate returns to any city from classes of this nature will be very great and may approach in value, by any measure that can be applied, the returns from the regular High School Courses. The evening students have a definite end in following certain studies. The instruction they receive will be made use of at once in the occupations they follow. In that way they make real educational progress, as well as acquire industrial proficiency. The benefits of progress made in this way are less likely to be lost through forgetfulness or want of suitability in later years.

The Evening Schools.

The Evening Schools hold a place all their own. No other institution so completely meets the needs of the people at large. Each school is a civic centre, in the best sense of the word, where thousands go to satisfy the need they find most urgent in their daily lives. The year 1909–10 surpassed all former records, both as to attendance and effectiveness. In the fourteen Grammar and two High Schools 8,947 pupils were registered as compared with 7,874 the preceding year, a gain of 1,073 About 3,000 of these were under sixteen years; over 3,500 were between 16 and 21; and the balance, or nearly 3,000 were over 21. 2,500 were foreigners. Over 3,000 girls and women were registered and over

2,000 of these took domestic subjects. Never before, in the history of the city, has so abundant provision been made for those who are ambitious to improve themselves and increase their earning power. We have only to note the above figures to realize how eagerly the opportunity has been grasped. The cost per pupil, on basis of registration, was $5.

The problem of Evening School work is the boy from 14 to 16 years of age. This class of pupils left the day school in the majority of cases because of lack of ability or interest. Regular grade work appeals to him no more at evening than at day school. To keep these boys profitably employed, vocational departments were opened in four schools and the experiment was made of forming a class in practical elementary science with the thought of giving the boys a broader outlook. So far the results are even better than expected.

Provision has been made for small groups of girls in sewing and millinery with adequate supervision. Greater interest, more and better work is the result. Pupils no longer come simply to get a dress made, or a hat trimmed, but are taught the art from the beginning and so are able to turn their instruction to practical benefit.

Vacation Schools.

The city of Buffalo in 1910 had no less than 12 Vacation Schools. The registration was 3,600 and the average daily attendance 2 687,or 75 per cent. The appropriation was $2.08 per capita. The interest was sustained and the results were excellent. All the older children recognized the commodity value as well as the beauty value of the things which their hands fashioned. Most of them felt dimly, but pleasurably, the power which they were gaining. Perhaps none were conscious of the disciplinary value or realized that character was making fast while they were "developing motor-brain areas." The older girls were delighted to find that by skillful and painstaking work they might transform a half dollar's worth of material into a lace handkerchief valued at from $5 to $8; that in every department of needlework their careful workmanship enhanced the value of the material many fold.

SECTION 2: AT NEW YORK CITY.

Free Lecture Courses.

Free lectures are provided in many cities The following is a brief summary of what is done under the Department of Education in New York City:—

These courses cover about 100 lectures given in different sections of greater New York, generally in school buildings and such other institutions as the American Museum of Natural History. In some centres the lectures are given weekly; in others semi-weekly.

During the year there are provided a course of 11 lectures on American History and a course of 11 on American Geography. Those who attend 90 per

cent of the course and pass examinations in January and June receive certificates from the Department. School children are not admitted.

The lecturers are paid about $10 per lecture and expenses. Stereopticon, when required, is furnished by the Department.

The New York Public Library announces, in connection with above lectures, that a book on the subjects dealt with may be borrowed without charge by any resident of the city.

In visiting the Stuyvesant High School it was observed from conspicuous advertisements that this was one of the Lecture Centres. Upwards of a million of the people of New York attend these lectures, a good proportion of which are on scientific subjects. In some cases after the audience is dismissed a conference is held of those most interested, and points of difficulty are discussed. In this way many have been led to go on to a more systematic and educative part of practical science. The Principal of the Stuyvesant School, Mr. Von Nardroff, who has been a lecturer on the subject of Physics, stated that he believed no money spent by the School Board led to greater educational and cultural results than do those lectures.

SECTION 3: AT ROCHESTER, N.Y.

Social Centres.

At Rochester a movement was begun some years ago which culminated in the opening of the school buildings as Social Centres.

"The Social Centre was not to take the place of any existing institution, it was not to be a charitable medium for the service particularly of the poor; it was not to be a new kind of evening school; it was not to take the place of any church or other institution of moral uplift; it was not to serve as simply an 'improvement association' by which the people in one community should seek only the welfare of their district; it was not to be a 'Civic Reform' organization, pledged to some change in city or State or national administration; it was intended to be the restoration to its true place in social life of the public school, in order that through this extended use of the school building, might be developed the community interest and the neighbourly spirit."

PROVISION FOR RECREATION.

It was decided that the Social Centre should provide opportunities for physical activity by means of gymnasium equipment and direction, baths, etc.; opportunities for recreation, in addition to those which the gymnasium would offer, by the provision of various innocent table games; opportunities for intellectual activity by the provision of a library and reading room and by the giving of a lecture or an entertainment at least once a week. The more directly social service of the Centres was to be gained through the opportunities offered for the organization of self-governing clubs of men, of women, of boys and of girls.

THE DISCUSSION OF PUBLIC QUESTIONS.

The use of the Centres for free, untramelled discussion of public questions was carefully considered and the fact was cited that the school extension committee had already gone over this matter and had passed a motion that "The committee should insist upon the free use of the school buildings chosen for neighbourhood meetings, even politics and religion not being tabooed." And this was decided as the rule that should prevail because such freedom was, of course, essential to the development of an institution "which shall serve the people in the city as the Little Red School House served the folks back home."

DIVISION OF TIME.

It was decided that the Social Centre should be open from 7.30 to 10.00 o'clock every evening in the week except Sunday. One evening was set apart for a general gathering of the men and women, boys and girls of the Centre. On this evening it was proposed that a lecture or entertainment, somewhat after the pattern of those which are provided in New York City, should be given.

The School Board should assume complete responsibility for the character of these entertainments. Like the lectures given in New York City, these general lectures were to cost not more than $10 a piece in addition to the expenses of the speakers. Unlike the lectures given in New York, these were to be provided without expense to the city whenever they could be secured without imposition.

It was decided that Friday evening should be used as the evening for the general lecture or entertainment. The other five evenings of the week were to be divided between the men and boys, who should have three, and the women and girls who should have the other two. Tuesday, Thursday and Saturday were set apart for the use of the men and boys, Monday and Wednesday for the women and girls.

DIRECTORS AND VOLUNTARY CLUBS.

Directors were appointed for the various departments of the work. The Director was appointed to a position somewhat similar to that of the principal of a school, overseeing the various activities and being present whenever the building was open. In addition to the Director, an assistant was appointed in the person of a woman to take charge of the womens' and girls' activities of the Centre and serve as their club Director. Besides, a Director of the boys' clubs was appointed. His duties required him to be present three evenings each week, prepare programmes for the boys' organizations, help the debaters and other speakers from among the boys themselves in their work of preparation and guide them in the orderly conduct of their club meetings.

Various clubs were organized. These took the form of boys' clubs and girls' clubs, adult clubs for men and adult clubs for women. Clubs were

organized for study as well as for games and play. Friday evening as a general evening was made the occasion of the coming together of all of the people in the Social Centre every week.

Wide Activities Under Principal Moulthrop.

The example of a school which was used in a very wide manner outside the regular day classes was that of the Washington Grammar School of which Col. S. P. Moulthrop was Principal. The plan of the school building itself had been worked out by the students of the Evening School and then worked out by the Architects for the final plans of the building itself. There are 64 rooms, 1,863 pupils in the day time and 1,432 pupils in the evening. The auditorium seats 1,800. Among the features of the school are:—

Swimming: There is a large swimming tank and shower bath. Swimming is taught during two afternoons a week for boys and two afternoons a week for girls. Every boy above the 4th grade has swimming.

Dental Clinic: There is a fine equipment for this work presented by a friend of the school.

Medical Inspection: The doctor and supervisor keep a close observation on all the children. Physico-psychological records of these students are taken by the teachers.

Domestic Science: Girls prepare meals in the course of lessons and ask their mothers to come and eat with them. Forty-four teachers take their meals in this department, the girls serving the tables.

Library: There is an excellent library which is taken charge of by the Association of Graduates of the School, who come back three evenings a week, have meetings and enjoy the evening school. A number of them take care of the library. Last year 2,900 books were taken out by the evening pupils and not one lost.

Auditorium: Open in the evenings for gatherings at which patriotic songs are sung, concerts held, etc., etc.

To Serve Civic Ends.

The experience at Rochester, notwithstanding some difficulties that arose, points to the fact that the wider use of the school plant is practicable, and desirable for social development and improvement and also for the promotion of strictly educational work.

A good feature of the Social Centre work is the awakening of interest and the development of ability not merely in the discussion but in the understanding of and participation in civic work which is concerned with the efficient administration of streets, water supply, sewerage system, lighting, transportation, etc. The school buildings, which are the property of the people, may with advantage be used by the people without any interference with the primary purposes of the school in the education of the children of the locality.

SECTION 4: AT OTTAWA, ONT.

Larger Use of Buildings and Equipment.

In his Annual Report (1912) Dr. J. H. Putman, Inspector of Public Schools, says:

"We have public school buildings and equipment worth a million dollars, all bought and paid for by the public. The buildings are kept in repair, heated and cleaned by public taxes. We can scarcely think of any other public utility which is in a more real sense the property of the people than a public school. These schools are built and maintained primarily for the education of young children, but those who would restrict the use of schools to this purpose alone take a very narrow view of their possibilities. Time was when people looked upon a school merely as a place where children learned the three R's. The more modern and truer conception of a school is that it should be a social agency primarily to plan and control profitable experiences for children, but beyond that a rallying centre for the educational life of the community.

"The schools are used barely 200 days a year and for five hours each day. They are heated and cared for during the whole year. It does seem that their usefulness in educating the people might be greatly extended if there could be in them public lectures and public meetings for the discussion of public topics. It does seem that evening classes, literary societies, reading rooms and debating clubs in the schools might be a means of doing much for the thousands of young men and women who have left school but have a desire for self-improvement.

"Perhaps I may take the public into my confidence by telling them that I have proposed to the Management Committee such a radical innovation as the installing in our schools one or more Kinemacolour machines for instruction and entertainment, allowing school children to attend exhibitions in the late afternoons and giving open entertainments to the older members of the family in the evenings.

The Use of Moving Pictures Suggested.

"I see that Mr. Edison proposes to so perfect moving pictures that they will transform the modern school and give a complete education to children who will have nothing to do except watch pictures. Mr. Edison is a great scientist but if he really believes what he is reported to have said, he knows very little about the real problems of education. Human beings are not educated by what they see but through what they do. Impression without expression has no value, and a child might spend his time watching the most perfect and elaborate moving pictures that it is possible to produce and yet make no progress toward real education.

"On the other hand no person who has had experience in teaching children can watch such Kinemacolour exhibitions as the Coronation of King George V. or the Indian Durbar without realizing that the moving picture might be a great

aid in teaching, especially with such subjects as geography and history. Already New York and Chicago in America, London, and other European cities are using the moving picture as an aid in school work.

* * * * * * *

"The moving picture has come to stay. We may put it in the school, control the character of the pictures and satisfy the child's craving for such entertainment while leaving him in his own school and under the supervision of his own teacher.

"We may in some cases prevent him from witnessing such shows as are now being given in amusement halls, but sooner or later he will satisfy his natural craving for colour and movement. In hundreds of cases our public school children are now going at night to badly ventilated halls, listening to coarse jokes and vulgar songs, while watching picture films which perhaps barely escaped the disapproval of the public censor. What shall our policy be?"

MOVING PICTURES TO ATTRACT AND INSTRUCT.

At the Industrial Art School, at Zurich, the Director had a suitable room fitted up for the use of Moving Pictures. He used them to illustrate scenes, processes and conditions for the benefit of the students. He also employed them to interest public gatherings in subjects that were connected with the School and its progress and the development of good taste and artistic ability. A firm in Paris was making films for the particular purpose of their being used for educational ends.

The Commission found similar use being made of a room fitted for the purpose at the Normal School at Fitchburg, Mass.

The use of Moving Pictures for educational purposes in connection with Industrial Training was brought before the Commission at London, Ont., by the testimony of Mr. Frank Leonard. Many scenes in connection with raw materials, transportation and manufacturing processes might be provided to instruct and entertain at the same time. The public response to the opportunity which has been provided in Moving Picture halls reveals the existence of an appetite and taste. It becomes the education authorities to see that these are improved by good food for the eyes and mind.

The use of Moving Pictures to illustrate some interesting features of industrial processes and manufacturing plants might be a means of attracting young people to the classes for training until the intrinsic value of the training became recognized and appealed to the higher motives.

It would be worth while in Canada to devote most of one evening a week to the recreational and entertaining side of education in connection with the movement for Industrial Training and Technical Education. The lantern with slides and the reflectograph are already in use in some Colleges. Consideration of the means, best suited to attract the attendance of those to be served, should be in the mind of those who are planning a system or method for the further education of those who have already left school at fourteen.

CHAPTER XIV: COMPULSORY ATTENDANCE AT CONTINUATION CLASSES AFTER FOURTEEN.

SECTION 1: THE SITUATION IN GERMANY.

Practically everybody with whom the Commission discussed the question in Germany, is convinced that voluntary Continuation Schools will not meet all the educational needs of modern communities. Employers may not allow their apprentices to attend the Continuation School unless it be in the evening, when they are too fatigued to profit fully by the instruction. Under those conditions the efficiency and satisfaction in work which are so necessary an influence in training for citizenship are out of the question, except for the vigorous and ambitious; and they are not the boys and girls who most require the educational supervision and help. The large majority of the school men in Germany are in favour of compulsory attendance at Continuation Schools carried on during week days and closing before seven o'clock in the evening. Most states of Germany have such schools in the large cities.

Where the attendance is compulsory by law it was learned, in the cases enquired into, that during the first two years there was considerable opposition on the part of numbers of employers, considerable indifference on the part of numbers of parents and considerable unwillingness on the part of numbers of pupils. After two years of operation the general opinion was that attendance at Continuation Classes is of such a wholesome and beneficial character that it is accepted as a regular part of the life of the community and that even if the compulsory requirement were withdrawn the attendance would continue and include the larger part of the youth of the locality.

Berlin and Prussia.

In Berlin the attendance at the Continuation Schools is obligatory from the fourteenth to the seventeenth year, that is to say, three years of 6 hours per week. The hours for instruction generally fall twice a week between 5 and 8 o'clock p.m. In some cases a whole afternoon is devoted to the Continuation Class.

Statistics show that about 59% of the boy workers in Prussia attend some Continuation School. The percentage of girls who attend is very much less. The introduction of compulsion has been gradually and greatly increasing the percentage who attend, but since the law applies only to the larger places, a large proportion of the young people in the Kingdom are not affected by it.

Notes From the Visit to Chemnitz.

Since 1873 in Saxony it has been necessary for boys in all communities to attend the Continuation School from the ages of 14 to 17 years, at least two hours per week. In Chemnitz four hours per week have been required since that time. The boys from some trades are now required to attend five hours per week. The expectation is that shortly it will become necessary for the boys in all trades to give this amount of time.

At the present time public opinion is strongly in favour of the Continuation Schools. The Secretary gave it as his opinion that if the compulsory law were removed now the boys would still continue to attend, either voluntarily or by request of their parents or employers. Formerly employers were strongly opposed to compulsory attendance at Continuation Classes, but now they are strongly in favour of them.

At the present time there is no Sunday or evening instruction for apprentices between the ages of 14 and 17. These all come in the day time. They have abandoned the previous system of giving the boys two periods of two hours per week and now they give them the instruction in one continuous session of four or five hours. The boys usually go in the morning, before they go to work at all, and so are fresh.

In Saxony the compulsory attendance applies to all communities, whereas in Prussia it applies only to towns of over 10,000 inhabitants.

The Secretary thought that public support of all education had been increased from the contact of so many workers with the Continuation Schools. The schools offer evening voluntary classes for journeymen.

Notes from the Visit to Dresden.

Dr. Lyon, Oberschulrat, said that the Continuation Schools were really introduced by the Government and not by the people, as employers or employees. There was opposition from the employers when compulsory attendance was required, but it disappeared in about a year. He favored the school workshop, although the Continuation Schools in Dresden have no workshops and not very much tool or machine equipment. Some Continuation School work was initiated by the different Trades Guilds, but attendance was made compulsory by the Government.

Notes from the Visit to Bremen.

Dr. Oebrichs, a member of the Senate in Bremen, has been largely responsible for the establishment and improvement of the school system in that city.

Bremen is a free city and the citizens are very independent. Therefore they were reluctant to establish anything which seemed like a trespass on personal freedom, such as the compulsory Continuation Schools. The large employers were opposed to it because it took the apprentices out of the factories in working hours. The smaller employers were more in favor of it because it gave their apprentices

greater intelligence, and they could thus compete with larger factories. The real movement for compulsory attendance came from the Senate of Bremen, and it actually was a little ahead of the public sentiment.

Compulsory attendance in the daytime had been in force 2 years at the time of our visit, and now there is very little opposition to it. It was for the benefit of the whole community. Workmen were strongly in favor of it.

Dr. Oebrichs' advice to Canada as a new country was to establish compulsory attendance Continuation Schools from the first, if possible.

Baden.

In the Grand Duchy of Baden attendance at Continuation Schools has been compulsory since 1874. The employers generally are as friendly to the Continuation Schools as are the parents of the children.

Regierungsrat Dr. Meir expressed the opinion that a compulsory requirement for attendance at Continuation Classes was necessary for at least a full generation of time. The compulsory law of Baden is applicable to the whole community, including the rural districts. The minimum of attendance is 3 hours per week. In most cases the instruction is given by the ordinary teachers, which Dr. Meir thinks not as satisfactory as though it were more professional and practical. Much stress is laid upon the teaching of the duties of citizenship.

Wurttemberg.

In the Kingdom of Wurttemberg the law is now general requiring all boys who are working to attend Continuation Classes until their 18th year. The compulsory law, as passed in 1909, was for one year of attendance only; next year the law extended the period to 2 years of attendance, and in 1911 it was made 3 years. Regierungsrat Dr. Hartmann is of the opinion that the compulsory law will be supported by public opinion and maintained.

Bavaria.

The compulsory attendance law prevails. The interest taken in the work and the support accorded to the Continuation Schools in Munich by the employers and trade association of masters, workmen and of assistants, leads one to the conclusion that the ultimate influence for the schools will not be compulsion alone, but their intelligent sympathy and collaboration. That is the opinion expressed by Mr. H. A. Clay in his pamphlet prepared for the Board of Education in England, *Compulsory Continuation Schools in Germany.* The following are quotations from that Report, indicating the attitude of representative societies:

Munich Society of Printers (Verein Munchener Buchdruckereibesitzer), representing proprietors of printing works:

"The new organization of the Technical Continuation Schools has according to our observations affected very advantageously the school attendance of the pupils and their desire to learn. In this respect very few complaints have been made, and they were only concerning voluntary

pupils who wished to enjoy the technical instruction, but did not submit readily to the discipline. The moral effect is extremely favourable. In particular the technical teaching was a necessity, for in the workshops this cannot be carried out in the requisite degree".

The Catholic "Hansa" Society of Merchants (Katholischer Kaufmannischer Verein "Hansa"):

"Nowadays when there are such great demands on the principal, it is scarcely possible for him any longer to train his young clerks in the way required by their interests and those of the profession in general. This is especially the case with the book-keeping which is particularly neglected, so that many a young man goes out into the world at the end of his indentures without a knowledge of the simplest principles of this subject and of correspondence; indeed, he scarcely understands the difference between debit and credit.....We do not hesitate to say to-day that many of our fears have proved unfounded, and that some of them were based on misconceptions..... It is not easy to give an opinion as to the effect of the school on character. We are, however, firmly convinced that the doing away with the evening instruction is a great advantage, and the moral gain far outweighs any objections to the early morning hours."

Munich Society of Lithographers (Proprietors)* (Verein Munchener Lithographie-und Steindruckereibesitzer):

"It cannot be sufficiently emphasized how great a need the Continuation School meets, and how desirable it is that this view should spread and deepen among the employers. It must be stated that the compulsory pupils attend the instruction with the greatest zeal and follow the lectures and practical exercises with interest and diligence. This is also particularly apparent from the large attendance of the so-called voluntary pupils. There is no question that the school, moreover, exerts an excellent influence on the moral behaviour of the boys, though there must naturally be exceptions here and there".

The Society of Shoemakers wrote:—

"A number of employers have not sufficient new work to enable them to train their apprentices so that at the end of their time they can complete the prescribed example of work. This shows that it is just the practical instruction which is of the utmost importance, for it is to this that two-thirds of the apprentices owe their success in qualifying. The shoemakers attach great value to the technical education. This is shown by the fact that several masters voluntarily send their apprentices a year and even longer to the school".

The Munich Society of Watchmakers said:—

"The establishing of the workshops increases the satisfaction in attending the school, and gives the opportunity of judging of the progress of the apprenticeship. The practical value cannot be too highly prized."

The German Society of Metalworkers replied:—

"The chief share of the success is due to the technical training. There can be no doubt that the practical teaching, hand in hand with the theoretical, can assure a better general training than a longer apprenticeship in the workshop without theoretical help. The loss of time which the master suffers through the teaching during the day is compensated many times over by what the pupil learns during school as it is now organized".

Mr. Clay says further:—"Inquiries made of a large firm of lithographers showed that there is a very decided feeling in favour of compulsory attendance at the Technical Continuation School, on the ground, among others, that the larger the firm the more likely is the training of the apprentice in the workshop to be one-sided. The head of the Munich Union of Printers (Proprietors) pointed out that each firm has its special line of work, and that thus it is impossible without the Continuation School, for the apprentice to get a survey of the whole scope of his trade. He is of opinion that the majority of his firms would not let the matter drop if there were no compulsion, for his society had pressed for the classes to coincide with the period of apprenticeship. Not much would be possible without the associations of employers, and, though at first many made

*Lithography is one of the largest industries of Munich.

difficulties, they, as well as the workmen's unions, are now all very much in favour of the Continuation Schools. The loss of time and disturbance of routine are not serious."

The following are further quotations from the excellent pamphlet by Mr. H. A. Clay, already referred to:

Attitude of Employers and Parents.

After this general survey of the activity of the evening schools, we may consider their relation to the employers, or rather the attitude of the employers to them. As was to be expected, when compulsion first was brought in there was some amount of hostility and even indirect resistance. There was the loss of the boys' time to create a feeling of dislike, and the annoyance at being obliged by law to pay the school fees, where these are charged, moderate as they are. As a result, many boys at first lost their employment, though the Labour Bureau was able to re-place some of them. Others again deducted the amount of the school fees from the wages earned, or made systematic difficulties as to sending their boys to the classes. But within less than five years one can say that the initial opposition has died away.

Apart from this, the employers are in close connection with the technical classes, through their advisory school committees. Thus there are expert groups (Fachschulkommissionen) of mechanicians, masons, photographers, grocers, butchers, and hairdressers, for instance, representing every imaginable trade. These have the right to and do visit the classes, and give valuable opinions as to the direction of the theoretical and practical teaching.

The parents—who are the third of the three factors, parents, school and employers—have presented no serious difficulty. Poverty only too often compels them to place their sons in unskilled work to earn an immediate wage. But they regard the compulsory attendance as a survival or continuation of the elementary school time. They are pleased to feel their boys are learning, and are ready to complain when the employer prevents them from going to the classses or when he does not teach them in the workshop all that might be expected.

It is here we see the value of a strong authority with a fixed policy. Experience shows that the boys who most needed it did not attend the Continuation Schools, and that, as in England, of those who did join, a large number fell out by the middle of each session. The Secretary of the Handwerkerkammer puts it, "without compulsion there are no Continuation Schools." The German looks on his compulsory service in the army as the best school for youth; he feels that the discipline has made a man of him, and he believes therefore in discipline for those who are not yet of age for the army, the discipline of attending classes that bear on the work of life, and of being bound or indentured to a fixed employment for a definite term of years.

Dr. Kerschensteiner's Opinion.

The information furnished by Dr. Kerschensteiner indicates his opinion as being strongly in favour of attendance being made compulsory, particularly to prevent the neglect of education by the indifferent and those who are not ambitious. He says:

People tell us industry requires thousands of hands fit to perform the same manipulation with the same unerring skill hour by hour, month by month, year by year. I fully believe that industry does require them. Division of labour is the vital element of industry. But industry is not the aim of human society. The aim of society is the increase of justice and culture. And if industry permanently continues to recklessly disregard this aim it becomes a danger, not only for the state, but also, in the end, for itself as well. A democratic or even a constitutional state that is ruled exclusively by the lust of gain, by money and the machine slaves that money buys, is doomed to inevitable ruin, as soon as the natural riches of the soil become exhausted and the population becomes too dense.

There is no escape from this natural fate of industry but state intervention, not too long postponed, to supplement the one-sided education afforded by industry, trade and traffic. It is in fact an entirely new duty that has arisen for the community since the economic revolutions of the last century. It arose not only in the interests of industry but in the most vital interests of the community itself. It is the imperative duty of the state to create school organizations which deal with the trade-training of boys and girls, which enter into the question with the utmost thoroughness, enlarging and deepening it, and thereby awakening in boys and girls many-sided capacity for work and a living joy in work.

It is a most important thing for a democratic country, or even a constitutional State like Germany, to have this new type of school which Germans call simply Continuation Schools. The conviction of their necessity for the whole life of the state has taken possession of the entire

population more and more during the last twenty years. In South Germany there is no city or town, however small, without one such school, at least for all boys. In North Germany the great industrial town of Essen is the only larger town in which such a school is wanting. These schools are compulsory in Bavaria, Wurttemberg, Saxony, Baden, and Hessen, both for town and country population, up to the age of sixteen, seventeen, or eighteen. They are not everywhere of equal educational value. There are still many town executives that have not yet been able to relinquish the old traditions out of which the schools arose as places for repetition of elementary school work. Not all those who are called upon to give judgment in this matter are thus far penetrated by the deep conviction that they have to deal with an independent school organism, requiring exactly the same budget, the same solicitude, and the same possibilities of expansion, as the primary schools. But everywhere the organizations are progressing, everywhere the representatives of industry and trade are, with few exceptions, beginning to realize that this new form of school can prove a blessing whenever its inner organization adapts itself to the calling of the boy or girl.

SECTION 2: THE SITUATION IN ENGLAND.

The Evening Schools of England have constituted an influential part of the educational effort for many years. They include Continuation classes in general school subjects, and classes with Technical, Commercial and Domestic Economy courses. According to the annual report (1908–9) of the Education Committee of Manchester, in nine of the more important towns (Liverpool, Manchester, Birmingham, Leeds, Sheffield, Bradford, Newcastle, Nottingham and Salford), with a population in 1907–8 of 3,974,012, there were 105,503 individual students attending Evening Classes.

Consideration by the Consultative Committee.

The question of compulsory attendance has been considered by the Consultative Committee, who issued a most comprehensive and valuable Report on the subject. While it deprecates the quoting as its conclusions the short summary of its Principal Recommendations, that objection would be applicable to the use of such a quotation for other than educational purposes in England. For the enlightenment of Canadians, and with due appreciation of the indebtedness of this Commission for dependable and appropriate information which has already been quoted, some paragraphs from the Short Summary of Principal Recommendations as it appears in the Committee's Report are submitted.

Before those are given, some extracts from other parts of the Report are presented.

The main purpose of the Continuation Schools is to provide, at convenient hours and under conditions compatible with the physical welfare of the pupils, further instruction for those who have entered upon the practical work of life, whether as apprentices or as independent wage earners, or in the duties of the home. It endeavours to meet the needs of both sexes. It presupposes a sufficient basis of elementary education, but, where that is defective, attempts to supply it. The lower age limit of its pupils varies, in the main, according to the age at which, under differing local by laws, boys and girls are released from compulsory attendance at the Day Schools. In the more advanced stages of its work, the Continuation School thus falls into two main, though not clearly demarcated, divisions—the Elementary and the Advanced. Its function is twofold: to prepare its pupils for the efficient discharge of the duties of citizenship, and to increase their adaptability and skill in bread-winning occupations.

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The first point that arises is whether these children are fitted when they leave the Day School to be transferred to their various callings or occupations without further school education.

The simplest way to approach the problem is to consider what happens to those children who leave the Day School at an early age and attend no further classes of any sort. It is sometimes urged that children who are preparing to earn their living either by purely manual labour, or by occupations in which manual labour holds at least a prominent part, are injuring their chances of industrial efficiency by remaining too long at their books. What they need, it is said, is early contact with the realities of the mill, the shop, or the desk. Thus, it is argued, did their fathers learn their trade and it is still the best method of training. A fatal objection to this argument however, is found in the fundamental changes of the conditions of industry in recent years of which the most important are the decay of the old system of apprenticeship, and the increasing influence of scientific knowledge upon trade conditions. In earlier days a boy who exchanged school for apprenticeship did not cease his education or his general training. Under the system at its best he was still definitely under tuition, and that of a fairly general and unspecialized kind. Above all, he was under continued discipline.

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In no country have Evening Schools and Classes played a more important part in popular education than in England and Wales. For more than two generations they attempted to supply the defects of a wholly insufficient provision of Elementary Day Schools. They supplied the first beginnings of a system of technical instruction. They have been intimately connected with the social and economic ideals of the skilled workers. They have given scope to individual energy and have helped in training the power of voluntary organization. On the other hand, they have been little more than an appendage to the more highly organized system of Elementary Day Schools. They have never yet been worked into a coherent system of national training. Their courses of instruction lack discipline because many of their pupils had no sound foundation of elementary knowledge.

It may truly be said, therefore, that the Evening Schools in England and Wales have offered useful opportunities to many of those whose force of character and physical vigour have enabled them to fight their way through difficulties to positions of responsibility and leadership. But they have failed, in great measure, to touch the less strenuous or the idle, and they have been too little adjusted to the needs of the rank and file, especially during the critical years of adolescence.

Thus the modern developments of the Continuation School in Germany have been closely connected with the work of the Sunday Schools. In many parts of Germany Continuation Schools still meet on Sunday, though there is a growing tendency to confine the more technical classes to other days of the week. It is not too much to say, however, that without the free use of the early hours of Sunday morning for purposes of secular or even technical instruction, the German system of Continuation Schools, which is now exerting a decisive influence upon educational opinion in France, Switzerland, and America as well as in Great Britain, could never have so quickly attained to its present development.

Some of the Consultative Committee's Conclusions.

"The record of the struggles of the Evening Schools points to the conclusion that this branch of national education can dispense with neither the self-sacrificing energy of individuals nor with the co-ordinating authority of the State. When the latter is lacking, we find an immense waste of effort in organization and a faltering indecision in educational aims. But without the hearty co-operation of volunteer helpers and without determination on the part of the students to battle against difficulties and to overcome them, Government grants and official regulations produce but disappointing results."

The paragraphs from the *Short Summary of Principal Recommendations* which deal directly with compulsory attendance are as follows:—

"Inasmuch as the foundations of a successful system of Continuation Schools must be laid in the Day School, the Committee recommend that increased attention should be given to the connection between the Continuation School and the Public Elementary School, in order that there may be less discontinuity of attendance, and that by the improved equipment of the pupils increased

expenditure upon Continuation Schools may be fully remunerative. With this object in view, the education given in the Day School should be improved by reducing the size of classes, by increasing the proportion of qualified teachers, by introducing more manual work (including domestic subjects in the case of girls), and by improving the regularity of attendance.

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"Junior Employment Registries should be established to give skilled advice to parents, managers, and teachers, in the selection of suitable occupations for the children between the time when they leave the Day School and their 17th birthday, and in the children's choice of such further courses of instruction as will help in qualifying for future skilled employment. These registries should be subsidized from public funds and should be closely related to any system of Adult Labour Bureaux which may hereafter be established.

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"It should be lawful for the Education Authority of any county borough to make by-laws (subject to confirmation by the Board of Education) for requiring the attendance at Continuation Classes, to an age to be fixed by the by-laws, but not exceeding 17 years, of any young persons resident or working in their district who are not otherwise receiving a suitable education. By-laws should be distinct for boys and girls. It should be left to the discretion of the Local Education Authority (*a*) to frame by-laws (1) for one sex only, (2) for part or parts of its district, (3) for those engaged in particular trades or occupations in that district, and (*b*) to determine the age or ages up to which the by-laws should be applicable within the limit of 17 years of age. No young persons should be required by such by-law to attend a Continuation Class held more than 2 miles from his or her place of residence.

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"It should be the statutory duty of every employer of any young person under 17 years of age (*a*) to enable him or her to attend Continuation Classes for such period of time and at such hours as may be required by the by-laws of the Local Education Authority of the district in which such young person either works or resides, and (*b*) to supply the names of all such persons to the Local Authority on demand. Further, in order to secure the regular attendance of pupils at Continuation Schools in areas where such attendance is made compulsory by by-law, all employers, in such trades or parts of the district as the by-law may specify, should be forbidden under penalty to employ or continue to employ any young person under 17 years of age who failed periodically to produce a card attesting his or her attendance at Continuation Classes in conformity with the terms of the local by-law.

"The Local Education Authority should have power to fix, after consultation with representatives of the employers and of the workpeople in each trade, the hours and seasons at which the compulsory Continuation Classes should be held. With a view to protecting young people from over-strain, the Local Edu-

cation Authority should have the further power of prescribing the limit of hours which may not be exceeded in any day or week, as the case may be, by employment and further education combined. Such restriction should be adjusted to the different conditions of the various trades and callings concerned."

SECTION 3: THE SITUATION IN SCOTLAND.

Under the Education (Scotland) Act of 1908 authority is given to municipalities to enact by-laws requiring attendance. When the Commission was in Scotland (1911) as far as could be learned the Act had not been actually put into operation, although by-laws had been made in two places. The following are paragraphs of the Act in question:

"(1) Without prejudice to any other power of a school board to provide instruction in continuation classes, it shall be the duty of a school board to make suitable provision of continuation classes for the further instruction of young persons above the age of fourteen with reference to the crafts and industries practised in the district (including agriculture if so practised and the domestic arts), or to such other crafts and industries as the school board, with the consent of the Department, may select, and also for their instruction in the English language and literature, and in Gaelic-speaking districts, if the school board so resolve, in the Gaelic language and literature. It shall also be their duty to make provision for their instruction in the laws of health and to afford opportunity for suitable physical training.

"(2) If it is represented to the Department on the petition of not less than ten ratepayers of the district that a school board are persistently failing in their duty under the foregoing subsection, the Department shall cause inquiry to be made and call upon the board to institute such continuation classes as appear to the Department to be expedient, and, failing compliance, may withhold or reduce any of the grants in use to be made to the board.

"(3) It shall be lawful for a school board from time to time to make, vary, and revoke bylaws for requiring the attendance at continuation classes, until such age, not exceeding seventeen years, as may be specified in the bylaws, of young persons above the age of fourteen years within their district who are not otherwise receiving a suitable education, or are not specially exempted by the school board from the operation of the bylaws, and that at such times and for such periods as may in such bylaws be specified. Such bylaws may also require all persons within the district having in regular employment any young person to whom such bylaws apply, to notify the same to the board at times specified in the bylaws, with particulars as to the hours during which the young person is employed by them:

Provided that no young person shall be required to attend a continuation class held beyond two miles measured along the nearest road from the residence of such young person.

"(5) If any person fails to notify the school board in terms of any such bylaws in regard to young persons employed by him, or knowingly employs a young person at any time when his attendance is by any such bylaw required at a continuation class, or for a number of hours which, when added to the time required under any such bylaw to be spent at a continuation class, causes the hours of employment and the time so spent, taken together, to exceed in any day or week, as the case may be, the period of employment permitted for such young person by any Act of Parliament, he shall be liable on summary conviction to a penalty not exceeding twenty shillings, or in case of a second or subsequent offence, whether relating to the same or another young person, not exceeding five pounds.

"(6) If any parent of a young person by wilful default, or by habitually neglecting to exercise due care, has conduced to the commission of an offence under the immediately preceding subsection or otherwise, through failure on the part of the young person to attend a continuation class as required in any such bylaw, he shall be liable on summary conviction to the like penalties as aforesaid."

SECTION 4: THE SITUATION IN THE UNITED STATES.

Ohio.

The two most significant pieces of legislation with reference to Vocational Education in 1910–11 were the innovations introduced into the laws of Ohio and Wisconsin. In both these commonwealths, the emphasis has been laid upon the encouragement of part-time and Continuation Schools; in both the approach has been partly through an attempt to claim by law a portion of the working day of the adolescent for after-training at the expense of the public.

In 1910, Ohio, without any previous legislation on the subject, injected a provision for part-time and continuation education into the attendance laws of the State. (House Bill 452—Ohio Session Laws 1910). No state aid is given to vocational training of any kind and there is no State Board of Education for the administration of either general or practical training. The Ohio statute, which was the first enacted in this country for the compulsory part-time schooling of those who are engaged in wage-earning occupations, required the attendance at school of all those under 16 years of age who are not able to meet a test for fifth-year pupils in reading, spelling, writing, English, grammar, geography and arithmetic. Those who have satisfactorily completed the eighth year of the common schools but are not regularly employed are required to attend the regular schools until they secure employment or have reached their seventeenth birthday. Whether or not a town or city shall establish part-time classes for those who have gone to work is left as a referendum to the Board of Education of the community. In school districts where no part-time day classes are provided all those fourteen years of age who have accepted regular employment after meeting the fifth grade test either in class or by examination are exempt from further school attendance; but wherever the Board of Education provides part-time day classes for the instruction of youths over fourteen years of age who have taken employment, attendance by such pupils upon this instruction is obligatory until they have either completed the eighth grade of the common schools or reached their seventeenth birthday.

Wisconsin.

As the result of the recommendations of the Wisconsin Commission on Industrial Education, 1910, laws were passed in 1911 in which the responsibility of the State for the training of all adolescents up to the age of sixteen, whether they remain in school or go to work, is asserted; the State taking complete control educationally, so to speak, of the child from his seventh to his sixteenth year.

No child under sixteen is permitted to work at any occupation hazardous to body, health or character. Every normal child is required to attend regularly the public school, or other equivalent school, from the seventh to the fourteenth year. Between fourteen and sixteen years of age there is an alternative;

every child shall continue to attend the common school faithfully or, upon obtaining a definite permit from the Commission of Labour, a truancy officer, or the judge of a state, county, or municipal court, the child may enter upon a definitely specified useful occupation, working thereat not more than 48 hours per week, including five hours per week to be spent in the industrial school. If he discontinues the permitted occupation at any time he must return at once to the public school and the employer must return the permit for cancellation.

Every child in Wisconsin between fourteen and sixteen years of age, who, under a special permit enters upon some useful employment, must go to an industrial, commercial, continuation or evening school for five hours each week, the employer continuing the wages during those hours, the attendance upon school being for such hours, and at such places, as the local Board of Education prescribes.

The Cincinnati, Ohio, Compulsory Education Law.

The Compulsory Education Law, which went into effect in May, 1910, provides that all children not regularly employed must remain in school until they are sixteen years of age. In order to be employed it is necessary for them to get "Certificates to Work" from the Superintendent of Schools in the school district in which they are employed. The law expressly provides that certificates are to be given only to youths, between 14 and 16 years of age, who have completed the fifth grade.

In order to get a certificate, pupils must bring with them to the Superintendent of Schools' office:

1st. A school record properly filled out and signed by their teacher or principal giving their (1) name, (2) date of birth, (3) residence, (4) grade (year in the course), (5) standing in their studies and general conduct, (6) number of weeks in attendance in the year previous to the date of applying for the school record.

2nd. A birth record duly attested: either a copy of the baptismal or birth certificate from a church, or the birth record from the City Health Department, or the affidavit of the parent or guardian made in person at the office issuing the certificate.

SECTION 5: THE SITUATION IN ONTARIO.

The following is a synopsis of the "School Attendance Adolescent Act" as published in Bulletin No. 2 by the Department of Education for Ontario:

Jurisdiction of the Boards.

(1) The jurisdiction of the Boards which possess the power of enforcing compulsory attendance under this Act is as follows:

Schools and classes of the High School grade are under the Boards of High School Trustees, the Boards of Education, and Continuation School Boards of

urban Continuation School districts; and schools and classes provided for under *The Industrial Education Act,* that is, industrial, technical, and art schools and classes and commercial schools and classes, are under the Advisory Industrial and Commercial Committees respectively.

(2) Schools and classes of the Public School grade are under the Boards of Education, and urban Public and Separate School Boards.

Local Option.

As the establishment of schools under this Act limits the control by the parent or guardian and the employer over the adolescent, and as it might involve a large expenditure by the ratepayers, the Act provides that no classes shall be established under it without an opportunity being given to the ratepayers for passing judgment on any proposed by-law.

The provisions are as follows:

(1) The by-laws must be passed by the Board at a special meeting, after due public notice of the meeting and the object thereof has been given by advertisement. Under this provision, a ratepayer may bring his views before his representatives on the School Board and so indirectly control the result.

(2) If within thirty days after the passing of the by-law under the Act. ten per cent of the electors of the municipality petition the Council, praying that the by-law shall be submitted to the electors, the Council shall do so, not later than the next general municipal election. Under this provision, the ratepayer may directly control the result.

By-Laws.

Under the Act, the Board has full discretionary powers which it is expected to exercise in accordance with the needs and capabilities of the locality.

The Board may provide compulsory attendance at the classes or schools, either established by the Board or at some other school in the municipality, of every adolescent who is not exempt under the by-law, provided, however, no child of the supporter of a Roman Catholic Separate School shall be required to attend any of the classes of a Public School.

It may provide courses of study and appoint teachers and instructors, and, in addition to the regular day classes, it may also establish and require attendance at special day and evening classes, including special classes for either sex or for both, and for those engaged in particular trades or other occupations. It may fix the seasons of the year and the number of hours in each day and in each week for the compulsory attendance.

And further, in accordance with the object of *The Industrial Education Act,* the details of the courses for those engaged in trades or like occupations are to be settled by the Advisory Industrial Committee and the details of the Commercial course by the Advisory Commercial Committee.

The Classes provided may, accordingly, be:

(1) The ordinary Day School Classes;

(2) Ordinary Evening Classes; and

(3) Other Day and Evening Classes which employees shall attend at certain seasons for a certain number of days in each week and of hours in each day as may be determined by the by-laws.

The Act also provides for the exemption from attendance of individuals or classes of individuals who are so provided for in the Act or the by-laws.

Duties of Parents and Guardians and of Employers.

Under the Act, the employer is obliged to give notice to the Board of the names of the adolescents in his employment and the hours which they work for him. He is also obliged to release the adolescent for the number of hours during which he may be required to attend the day classes provided for him by the Board, with the provision that the total daily number of hours of employment and of attendance at compulsory classes shall together not exceed the total numbers of hours during which the adolescent may be lawfully employed.

The parent or guardian is also required to see that the adolescent attends the classes provided for him.

In the case of disregard of the provisions of the Act, the employer or parent or guardian incurs a penalty not exceeding $5 for the first offence and not exceeding $25 in the case of the second offence.

Powers and Duties of Truant Officers.

For the purpose of enforcing the by-laws, the Truant Officer appointed under *The Truancy Act* possesses the power and shall perform the duties enforced and imposed upon him by that Act.

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ROYAL COMMISSION

ON

INDUSTRIAL TRAINING AND TECHNICAL EDUCATION

REPORT OF THE COMMISSIONERS

Volume I of Part III

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1913

ROYAL COMMISSION ON INDUSTRIAL TRAINING AND TECHNICAL EDUCATION.

OTTAWA, 31st May, 1913.

The Honourable T. W. CROTHERS, K.C., M.P.,

Minister of Labour.

SIR,—By direction of the Royal Commission on Industrial Training and Technical Education we most respectfully submit Volume I of Part III of the Report.

JAS. W. ROBERTSON,

Chairman.

THOS. BENGOUGH,

Secretary.

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ENGLAND.

CHAPTER I: OUTLINE OF THE EDUCATIONAL SYSTEM.

SECTION 1: INTRODUCTORY.

A reasonably full statement is made of the character of the provisions for general education in England, and then a report is given in greater detail of examples of organization and of some types of classes, schools and institutions which provide education for industrial and technical purposes. It is not practicable to put within the limits of this Report anything like a full description of all that is being done or planned for in Industrial and Technical Education.

Perhaps nowhere else are better examples to be found of the separate parts of education, or of education organized for a single community, than in spots or places in England. The alleged defects and shortcomings of the "system" or want of a national system, were not discernible to the Commission in the several schools and institutions visited.

The outstanding feature was the extent and character of the work in Evening Classes. The voluntary attendance was surprisingly large—in some cities over 3 % of the total population. In the case of the University of Sheffield the attendance at Evening Classes in 1909 was 1390 as compared with 500 day students. At the Manchester Municipal School of Technology about 300 students attend the full day courses, about 700 come part time not exceeding one day per week, and nearly 5,000 take the Evening Classes.

No doubt the cities and towns visited were among the foremost in educational activity; and the leaders in them were those who spoke more anxiously concerning the need for covering the whole of their field still more adequately and effectively. Of what was left undone the Commission could not inform itself; but it learned much which will doubtless prove of benefit to Canada, from visiting the schools, seeing the attitude and work of the pupils, meeting the teachers, discussing the problems and outlook with the educational leaders, and examining the provisions made in the several communities.

A Word on Nomenclature.

The nomenclature of the English schools is somewhat different from that of the schools of Canada. A word or two here will suffice to guard against misapprehension.

A Public Elementary School is known as a "Provided School" or "Council School" when it is provided and maintained by a public education Authority; it may be a "Voluntary School" or "Non-provided School" when it is provided by some other Body or persons. In both cases the Local Education Authority exercises control over expenditure for the maintenance of the educational work.

The Managers of "Non-provided Schools" are required to comply with certain conditions specified in the Education (England and Wales) Act 1902 in connection with the appointment and dismissal of the teachers, making such alterations and improvements in the buildings as may be required; keeping the school premises in repair; and giving religious instruction in accordance with the provisions of the trust deed relating to the school.

The renowned Public Schools like Eton, Rugby, Winchester, etc., are not in any sense "public" as Canadians use that word; but are privately endowed and controlled residential schools, attended almost exclusively by boys of the higher social classes, many of whom who are being prepared for the Universities or other institutions.

"Grammar" Schools are Secondary Schools for boys, and correspond in the main to the High Schools, Academies and Collegiate Institutes of Canada.

On the other hand, "High" Schools in England are usually Secondary Schools for girls, of a rank somewhat similar to the "Grammar" schools for boys.

The Menace of "Payment by Results."

It was frequently put forward that the absence of a logically arranged system or gradation of schools, each duly recognized as covering a definite field, led to the duplication of provision for pupils of different stages of advancement, particularly in Secondary Education; and that the provision for Secondary Education of recognized grade is greatly below the needs of the population in some localities. The passion for standardization by examination is disappearing. It is not forgotten that the greatest menace and injury to real education in England occurred during the period when the attempt at standardizing educational attainment was greatest and when stimulation from the Board of Education was given through a system of "payment by results." The results were ascertained by written examinations on prescribed subjects which led to "cram and drill" to circumvent the examiner, and to earn grants and promotions regardless of the education of the children by self-realization through their experiences. There is gratitude in the tones which speak of that as a thing of the past.

Specialization for Examinations.

No less an authority than Sir Joseph J. Thompson, President of the British Association for the Advancement of Science, at the time of the Winnipeg Meeting in 1909, said in regard to this matter in the case of more advanced students:—

> The chief evil from which we at Cambridge [University] suffer, and which you have avoided is, I am convinced, the excessive competition for scholarships which confronts our students at almost every stage of their education. You may form some estimate of the prevalence of these scholarships if I tell you that the Colleges in the University of Cambridge alone give more than £35,000 a year in scholarships to undergraduates, and I suppose the case is much the same at Oxford. The result of this is that preparation for these scholarships dominates the education of the great majority of the cleverer boys who come to these universities, and indeed, in some quarters, it seems to be held that the chief duty of a schoolmaster, and the best test of his efficiency, is to make his boys get scholarships. The preparation for the scholarship too often means that about two years before the examination the boy begins to specialise, and from the age of sixteen does little else than the subject, be it mathematics, classics, or natural science, for which he wishes to get a scholarship; then, on entering the university, he spends three or four years studying the same subject before he takes his degree, when his real life work ought to begin.

How has this training fitted him for this work? I will take the case in which the system might, perhaps, be expected to show to greatest advantage, when his work is to be original research in the subject he has been studying. He has certainly acquired a very minute acquaintance with his subject—indeed, the knowledge possessed by some of the students trained under this system is quite remarkable, much greater than that of any other students I have ever met. But though he has acquired knowledge, the effect of studying one subject, and one subject only for so long a time, is too often to dull his enthusiasm for it, and he begins research with much of his early interest and keenness evaporated. Now there is hardly any quality more essential to success in research than enthusiasm. * * * *

I am convinced that no greater evil can be done to a young man than to dull his enthusiasm. In a very considerable experience of students of physics beginning research, I have met with more—many more—failures from lack of enthusiasm and determination than from any lack of knowledge or of what is usually known as cleverness.* * * *

Much Progress Recently.

There is more or less intimate and cordial co-operation and more or less distant and intensive competition between the local Education Authorities, private Foundations, public and quasi-public Bodies, Universities and the Board of Education in the promotion of educational effort.

The Commission was impressed by the intellectual and social qualities of the men and women who were on educational committees; by the earnestness with which educational matters were being dealt with; and by the high attainments and abilities of the officials and teachers who were in charge of the administration of education in the several areas.

From all sides the Commission gathered the impression that during the past ten years a great awakening of endeavour had occurred, and that marvellous progress was being made in providing for the further education of boys and girls after the legal age for leaving the Elementary School. Only by an intimate knowledge of local conditions and history, would it be possible to trace the movement in such a way as to indicate all the forces at work. That was not attempted, but the Commission feels warranted in recording that what impressed it most deeply was the fact that the earnest service of a comparatively few enthusiastic and forceful men and women in any locality was concurrent with convincing evidence of progress, comprehensive planning, enlarged public support and increased efficiency in educational work.

A system or want of system that encourages local initiative, and the exercise of local responsibility and control, has obvious excellences not to be dismissed as a matter of course in favour of a system which calls for uniform conformity to detailed regulations and even high standards appointed without local action and advice. A variety of vital individual contributions ministers to growth and power among the vigorous. A proper function of "system" is to see that the weak and indifferent are not neglected.

To Rescue the Perishing.

The unsolved problem of England seems to lie with the multitudes of young people between 13 and 18 in the factory towns who are under par in physique, without the bracing stimulation of good homes and without the vision or the ambition to seek educational preparation for mature life. One cannot expect an old head on young shoulders, especially when the backbone has not been

well nourished morally or physically. However side by side with the glaring evidence of stunted life, from huddled conditions of working and living, are found plenty of proofs of strenuous efforts to meet the situation educationally and to bring about better conditions.

One did not find better classes or schools in Germany than in England; but the appearance of the young workers in the textile industries, for example, was immensely superior in Germany. That applied in some measure to the other factory workers in the two countries. On the other hand the factory workers in the woollen industries in the south of Scotland were evidently superior to the Germans in housing conditions and general bearing and surroundings. The intelligence, self-control and ability, that come from the union of education and industry, are perhaps only in their fullness for the children's children. England has a long way to make up; but the present direction and pace impressed the Commission as full of promise for the stability, growth and well being of the headquarters of the British Empire.

SECTION 2: ORGANIZATION AND ADMINISTRATION.

The Board of Education, which administers education in England, consists of a President, Parliamentary and Permanent Secretaries and office staff. The Premier, Chancellor of the Exchequer, the Principal Secretaries of State and the Lord President of the Council are ex-officio members of the Board, which is assisted by a Consultative Committee.

The chief Departments are: Elementary Education, Secondary Schools, Technological, Medical, Royal College of Art, Universities, Special Enquiries and Reports, Museums and Geological Survey. The Board has a full staff of Inspectors of both sexes for Elementary, Secondary and Technological Education and for physical exercises. The Welsh Department has a Permanent Secretary and Chief Inspector and a staff of Inspectors.

Local Organization.

By the Education (England and Wales) Act, 1902, School Boards—which up to that time served as the Authority for dealing with Elementary Education—were abolished, and the Council of the Borough, or in every administrative County the Council of the County, became the Local Education Authority, with powers of control and supervision over Higher as well as Elementary Education. Higher Education in this connection means "Education other than Elementary," and includes the training of teachers and the giving of all kinds of education, whether technical, manual instruction, or any other kind. In regard to Elementary Education the Local Authorities somewhat vary. For instance, the Council of every County Borough (that is, a borough with a population of 50,000 and upwards which is constituted a county borough under the

Local Government Act, 1888) is the sole Authority for Elementary as well as Higher Education, whereas the Council of a County has full powers as to higher education for the whole of its area, whilst the Council of every Borough within the County with a population of over 10,000 and the Council of every Urban District with a population of over 20,000 will each be, within its own area, the Local Education Authority for the purposes of Elementary Education. In the case of Higher Education the Council of every borough which is not a County Borough, and the Council of every Urban District, no matter what is its size, have concurrent powers to supply or aid the supply of education other than Elementary, provided that it does not raise, in any year, a sum exceeding that which would be produced by a rate of a penny in the pound. County Councils, acting quite independently of the small boroughs and urban districts, are empowered to raise rates for higher education for the whole of the County not exceeding twopence in the pound, or such higher rate as the Local Government Board may, in exceptional circumstances, consent to.

Every Local Education Authority exercises the powers and duties formerly undertaken by the School Boards and School Attendance Committees, and is responsible for and has control of all secular instruction in Public Elementary Schools, whether in a Council School (that is, a school provided by the late School Board or by the present Education Committee) or a Voluntary School (that is, a school provided by any other persons or Bodies). In this way the Education Committee of a Borough Council or a County Council or the Council of an Urban District is made responsible for the maintenance and efficiency of all Public Elementary Schools within its area. In other words it has unrestricted control over its own schools, technically known as "Provided Schools"; whilst it has complete control over all expenditure required for the purpose of maintaining and keeping efficient all Voluntary Schools technically known as "Non-provided Schools."

Each Local Education Authority appoints an Education Committee composed of Members of the Council and other persons interested in education, in a proportion defined by the Scheme for each Education Committee, with the approval of the Board of Education.

The Local Education Authorities under the Education Act (1902) include 62 County Councils, 72 County Boroughs, 136 autonomous Municipal Boroughs, 56 Urban Districts and the Scilly Isles; a total of 327. The Administrative Provisions Act authorized Local Authorities to aid by scholarships or bursaries the instruction in Public Elementary Schools of scholars from the age of 12 up to the limit of age fixed for the provision of instruction in Public Elementary Schools (16 years) and with the consent of the Government Board of Education to extend this aid beyond the age of 16 years. This Act also provides that money may be expended in maintaining vacation schools and classes, play centres or other means of recreation for children attending the Public Elementary Schools. Medical inspection of children immediately before or at the time of their admission is required of the Local Authorities.

Regulations of Board of Education.

The regulations of the Board of Education endeavour to discourage early specialization by insisting on sound general education up to 16 at least, and require that the curriculum provide duly graded and continuous instruction in subjects necessary for a well-balanced education. They provide for elasticity in the scope and content of the courses and for the encouragement of local initiative in meeting the varying requirements of different areas and making fullest use of existing means. A large amount of liberty is allowed in framing the curricula according to the requirements of the area, and in defining the aim which the particular school sets before itself.

The Board encourages experiments and a healthy variation of type. The fullest freedom is allowed, consistent with real efficiency in the education provided. In addition to the general increase of elasticity, which has always been kept in view, and which the Board has been able to give in successive revisions of the regulations, special provision has lately been made for encouraging, by means of a special grant, any carefully devised educational experiment of a pioneer and promising nature in methods of teaching.

All improvements of curriculum depend on the establishment of Preparatory Schools with a satisfactory age of entry and adequately prolonged school life, and a sufficient and efficient staff.

In 1906 the Board introduced a regulation forbidding grant-earning Secondary Schools to have classes containing more than 35 pupils, and fixing the normal maximum at 30. Subsequent regulations make it clear that classes of between 30 and 35 are allowed only as an exceptional arrangement to meet special or temporary difficulties of classification.

The County Funds for Higher Education are provided by a general County rate and by Government grants (Customs and Excise) and from the various Trade Guilds which are both numerous and wealthy, especially in London. In recent years the amounts derived from the Customs and Excise have decreased considerably and the Government has promised to set aside a portion of the Land Tax to make up the deficiency.

Working of Act of 1902.

A good example of how the Act of 1902 works out is furnished by the Administrative County of Lancashire.

The County Education Committee, when considering the best method of obtaining the funds for Higher Education, decided in favour of levying a general county rate for the purpose of aiding or supplying Higher Education throughout the county. They came to the conclusion that, owing to the great difficulty of determining the area which a Secondary Day School, or in a less degree an Evening Technical School, should serve, a system of differential rating could not be devised which would be practicable and generally recognized as just.

"Local" Higher Education Committees were formed as sub-committees of the County Education Committee and these sub-committees were made

responsible for all evening schools and classes within their respective districts. Each local Higher Education sub-committee must submit annually to the Lancashire Education Committee for approval: (1) the scheme of work to be carried out within the area of the local sub-committee, and (2) an estimate of the income and expenditure for carrying out the proposed scheme.

It is necessary that the scheme of the local sub-committee should be submitted for approval in order to ensure that the instruction given within the area of that sub-committee shall fit in with the general scheme of education for the county and avoid the unnecessary establishment of schools and classes doing similar work of an advanced character within immediately contiguous areas, and in the interests generally of efficiency and economy.

An "Example" Education Committee.

The Lancashire Education Committee undertakes to provide out of County funds for the carrying out of any approved scheme of a local Higher Education sub-committee to the following extent:—

(*a*) In the case of rural districts where there are no concurrent rating powers the County Committee provides the whole cost after taking into consideration the fees and Government grants which the rural districts may receive.

(*b*) In the case of Boroughs or Urban Districts possessing concurrent rating powers the County Committee provides a sum equal to that contributed by the Borough or Urban District until the amount of the contribution is equal to that of the proceeds of a local penny rate. For any expenditure beyond this amount the County Committee undertakes the entire responsibility.

At the close of each financial year the Higher Education accounts of each District are audited by the County Auditor, who in the course of his examination of the accounts requires to be satisfied that the actual expenditure has been in accordance with the approved scheme.

The Lancashire County Education Committee urges upon local committees the importance of bringing the Day and Evening Schools into closer contact. With this object in view they have empowered the local sub-committees to admit to the Evening Classes free of charge (*a*) children who have left the Day School during the twelve months immediately preceding the session during which they attend Evening Classes for the first time, (*b*) children who are qualified to leave the Day School at the commencement of the Evening School session or who are expected to leave before the end of December. In addition to this, under a recent revision of the scale of salaries paid to school attendance officers, increases of salary were granted only to such of the officers as definitely undertook to interview children about to leave the Day School with the object of inducing them to immediately enter Evening Classes.

SECTION 3: THE ELEMENTARY SCHOOLS.

In the Public Elementary Schools in 1907-8 there was an enrollment of 5,984,130 pupils, equivalent to 17% of the population; and the average attendance was 88% of the enrollment. The number of professors and teachers in these schools was 177,628. In the Training Colleges for elementary teachers there was an attendance of 10,492.

The total expenditure for Elementary Education in 1907-8 amounted to £21,987,002 ($107,000,000) almost exactly one half of this coming from Parliamentary grants and the balance from rates, fees and other local sources. The Children's Act, though not strictly an educational measure, extends the province of the Local Education Authorities considerably, especially through school attendance officers, and strengthens directly and by indirect influence the compulsory school attendance laws.

The purpose and trend of Public Elementary Education is set forth in the Introduction to the Elementary School Code of 1909:—

The purpose of the Public Elementary School is to form and strengthen the character and to develop the intelligence of the children entrusted to it, and to make the best use of the school years available, in assisting both girls and boys, according to their different needs, to fit themselves practically, as well as intellectually, for the work of life

With this purpose in view, it will be the aim of the School to train the children carefully in the habits of observation and clear reasoning, so that they may gain an intelligent acquaintance with some of the facts and laws of nature; to arouse in them a living interest in the ideal and achievements of mankind, and to bring them to some familiarity with the literature and history of their own country; to give them some power over language as an instrument of thought and expression, and, while making them conscious of the limitations of their knowledge to develop in them such a taste for good reading and thoughtful study as will enable them to increase that knowledge in after years by their own efforts.

The school must at the same time encourage to the utmost the children's natural activities of hand and eye by suitable forms of practical work and manual instruction; and afford them every opportunity for the healthy development of their bodies, not only by training them in appropriate physical excercises and encouraging them in organized games, but also by instructing them in the working of some of the simpler laws of health.

It will be an important though subsidiary object of the School to discover individual children who show promise of exceptional capacity, and to develop their special gifts –(so far as this can be done without sacrificing the interests of the majority of the children), so that they may be qualified to pass at the proper age into Secondary Schools, and be able to derive the maximum benefit from the education there offered them.

And, though their opportunities are but brief, the teachers can yet do much to lay the foundations of conduct. They can endeavour, by example and influence, aided by the sense of discipline which should pervade the school, to implant in the children habits of industry, self-control, and courageous perseverance in the face of difficulties; they can teach them to reverence what is noble, to be ready for self-sacrifice, and to strive their utmost after purity and truth; they can foster a strong sense of duty, and instil in them that consideration and respect for others which must be the foundation of unselfishness and the true basis of all good manners; while the corporate life of the school, especially in the playground, should develop that instinct for fair play and for loyalty to one another which is the germ of a wider sense of honour in later life.

In all these endeavours the school should enlist, as far as possible, the interest and co-operation of the parents and the home in an united effort to enable the children not merely to reach their full development as individuals, but also to become upright and useful members of the community in which they live, and worthy sons and daughters of the country to which they belong.

The Code sets forth the following principles and suggestions:—

INFANTS:

The principal aim of the school in relation to infants is to provide opportunities for the free development of their bodies and minds, and for the formation of habits of obedience and attention. The subjects should include physical exercises in the form of games; the telling of stories to the children by the teachers to lead them to form ideas and to express them in simple language of their own.

For older infants the exercises should be supplemented by short lessons in recitation, drawing, reading, writing, very simple arithmetic and singing.

Instruction in sewing and knitting *may* be given, but care must be taken to avoid fine work and injury to eyesight.

OLDER SCHOLARS:

In schools for older scholars the subjects described below should be taught in a manner suitable to the age and capacity of the several classes. It is not necessary that all the subjects should be taught in every class:—

The English language, including recitation, reading silently for information, and composition; Handwriting, taught with a view to speed as well as legibility; Arithmetic, including practical work in measuring and weighing and practical instruction in mensuration; Drawing, including modelling, avoiding the use of flat copies and instead practising the direct representation, at sight and from memory, of actual objects, proceeding from simple to complex forms; Observation lessons and Nature study, which may be connected with the teaching of gardening to the older scholars; Geography, including the use and making of maps; History, including a knowledge of the lives of great men and women and the lessons to be learnt therefrom, and, in connection therewith, lessons in citizenship in the higher classes; Singing, and elementary musical knowledge; National and Folk songs to be freely used throughout the school; Hygiene and Physical training, which may include instruction and practice in swimming; Domestic subjects (for girls only), including needlework, knitting, cookery, laundry work and housewifery; Moral instruction, specially directed to the inculcation of courage, truthfulness, cleanliness of mind, body and speech, the love of fair-play; consideration and respect for others, gentleness to the weaker, kindness to animals, self-control and temperance, self-denial, love of one's country, and the appreciation of beauty in nature and in art.

STAFFING OF SCHOOLS.

Every school or department must have a head teacher either certificated or recognized by the Board of Education as having, under their regulations, the status of a certificated teacher. He must undertake no outside duties which occupy any part of the school hours.

Every school or department must have at least one certificated teacher (inclusive of the head teacher) for every complete group of eighty scholars in average attendance.

In any school the number of scholars on the register of any class or group of classes under the instruction of one teacher must not exceed 60.

No person who is a clerk in Holy Orders or the regular Minister of a congregation can be recognized as part of the staff of a school or department.

A certificated teacher under the regulations of the Board is one who has passed the Board's Final Examination of Students in Training Colleges for Teachers or an alternative final examination recognized by the Board (e.g. The final examination for certificate of the University of Cambridge in theory, history and practice of teaching together with the certificate of practical efficiency in teaching, etc.).

A candidate for recognition by the Board as an uncertificated assistant-teacher must have passed the King's Scholarship Examination or the Preliminary Examination for the Elementary School Teachers' Certificate held by the Board or an alternative examination recognized by the Board as of equal value.

Where the Board are satisfied that the circumstances of the case render it necessary they may recognize from time to time as supplementary teachers, suitable women over 18 years of age who are specially approved by the Inspector for their capacity in teaching, but not more than two supplementary teachers will be recognized on the staff of a department at any one time.

Student teachers or Pupil Teachers are recognized by the Board as "teachers undergoing preliminary education" under special regulations.

In no case will the staff of a school be considered sufficient by the Board of Education unless (in the aggregate) it is *at least* equivalent for the average attendance of the school or department allowing approximately 35 scholars for the Head teacher, 60 for each certificated teacher, 35 for each uncertificated assistant teacher, and 20 for each student teacher or supplementary teacher.

Hand Work in Schools.

Since the Education Act of 1902 the development toward a system providing instruction adapted to the needs of all children has given to industrial arts work in many schools a place almost as important as that of any other school subject. In most of the English cities handicraft work for boys, and domestic economy for girls are found with well equipped shops and laboratories. Although there is great variety in details of curriculum and method, most of the schools are developing the work from the industrial standpoint. Its purpose is avowedly vocational, yet there is increasing attention to the educational or liberal elements involved. In most towns "centres," are established in connection with one school, and the pupils of that school and neighboring schools are given instruction in that centre. These centres are well equipped. In London by 1909, accommodation had been provided for over 80 per cent of all the children. All boys in Grade VI who are eleven years of age or more may take the handicraft work, as may all boys also who are over twelve but below Grade VI. Most of the centres for handicraft give woodwork, and this is suitably combined with drawing. Metal work is given in a few centres.

For girls, centres are provided for domestic economy. Three divisions of this work are offered—cookery, laundry work, and housewifery. Girls of Grade V, and girls of twelve years of age below Grade V, are eligible to receive instruction in domestic economy. The work varies with the need of the particular districts in which the centres are located. Practical utility for the girls in their homes is a dominant factor in shaping the courses. A full half-day is usually given to the work each week for both boys and girls, the teacher thus having two groups each day. In a few cities in England periods are so shortened as to permit of three groups each day. In almost every school a series of models is found which usually combines the logical sequence idea with the industrial, that is, projects of appreciable utility are chosen and are so arranged that they

provide the sequence for the development of tool processes and technical progress. In a few cities the Sloyd system is found almost wholly unmodified. Most courses are planned to cover two or three years.

Below the grades doing work in centres or shops, there is often a well-developed course in handwork. Paper folding, cardboard construction, wire-work, cord-work, and parcel-tying are often found. Clay modelling is occasionally employed. Knitting and needlework are very common in the lower grades.

Medical Inspection.

According to Dr. Sadler, medical inspection of schools is conducted in co-operation with the medical department under the Board of Education, which was constituted in 1907 and has been extended and strengthened each following year. In the 327 local education areas, 307 school medical officers have been recognized, and in 224 of these cases the medical officer appointed was the medical officer of health of the area, and thus in the majority of the cases a more or less complete unification of the two medical services was secured, while in the remaining cases some degree of effective co-ordination, either personal or administrative is the rule. The experience in this service thus organized illustrates in a striking manner the vital relation between medical inspection of schools taken in this most restricted sense and consideration of the external sanitation of the school, the sanitation and hygiene of the home and the whole business of securing cleanliness. Much of the medical work is already of proved value and the medical inspection is yielding substantial results in practical form. In almost all educational areas this new work is contributing to wider knowledge of child life than has been obtainable in the past. It cannot fail to guide, encourage and foster the highest kind of social development. To this must be added the beneficent result of medical treatment for tens of thousands of school children, while the increased attention devoted to school hygiene, including the whole health conditions and physical training of the child, is already beginning to bear fruit in a better conception of the true ends of a State system of education.

Care Committees and their Work.

The organization of Care Committees, under the general direction of Local Authorities, to look after the condition of necessitous children attending the schools is one of the most interesting signs of the awakening of the public conscience of England to responsibility for the welfare of the people. These Committees are of the greatest utility in much of the work in relation to the physical condition of the children. They take an interest in all matters concerning the physical well-being of the children and co-ordinate all agencies bearing on this work outside the school. When a Children's Care Committee is appointed the members endeavour to procure cleansing medical treatment or the amelioration of the existing physical condition of all children referred to them by doctors or nurses in the medical report book of the school, penetrating to the

homes and endeavouring to interest more particularly the indifferent parents who do not attend to see the doctor and whose children are the difficult cases in which to obtain improvement. The Committees have also the duty of determining which children are necessitous.

Efficiency of Elementary Schools.

The efficiency of the Elementary School training was strikingly illustrated by Mr. R. Blair, Education Officer of the London County Council, in a paper before the Educational Science Section of the British Association, at the Sheffield meeting. As a result of enquiries he had sent out to many leading industrial and commercial firms in England, he stated that almost all of them explained their preference for Elementary School boys in such a way as to pay a well deserved compliment directly to the adaptability of the Elementary School boy and indirectly to the existing system of education. A good many spoke in high terms of the value of Evening Schools, including Technical Institutes and Schools of Art. Banks and Insurance and some other firms generally sought for the Secondary School product. Mr. Blair drew this conclusion: "catch the boy as soon as he leaves the Elementary School and induce him to attend Evening Classes; add to that the training of the workshop or the business house and you have the fairly common plan of training those who will rise above the rank of "hands." One of the greatest industrial leaders in England states that at the present moment all the men who fill positions of responsibility in his office came from Elementary Schools. He adds that they belong to a period when Secondary Schools were not so accessible as now and that the same remark may not be applicable to their successors."

SECTION 4: HIGHER ELEMENTARY SCHOOLS.

The Higher Elementary Schools take children at about twelve years of age, giving them a course of three or four years. The curricula are made to fit the needs of particular localities. Some are distinctively industrial in their bearings, giving work as in the Centres for Industrial Arts but devoting more time to the shops or laboratories, and making the mathematics, English and drawing as definitely practical as possible. Others of these schools emphasize commercial subjects, while still others are general in their nature.

These schools afford the only means of prolonging the systematic education of the majority of the children in Great Britain, and the Government offers an inducement to Local Authorities to maintain schools of this advanced grade by an extra grant when they conform to specified conditions.

Manchester, which under the regime of the School Boards, led the country in the establishment of Higher Grade Schools, has recently organized six Higher Elementary or Central Schools of a new type which are more fully dealt with in our report under Manchester.

While the conditions attached to the extra grant for these schools are especially helpful in smaller communities they have not proved entirely satisfactory to the education authorities of the large cities. In London, schools of this class have been withdrawn and Central Schools have been started with an industrial or commercial or domestic arts bias. These schools are organized for pupils over 11 years of age and are more directly industrial in their aim than those subject to the regulations of the Board of Education for Higher Elementary Schools. They are vocational in character, using that word as now current in educational discussions in this country, and are reported on hereafter under Central Schools in London.

From 1901 to 1904 Higher Elementary Schools provided four courses of instruction of a predominantly scientific character and the minimum age of admission was 10. Under the Code of 1905 and subsequent Codes a new type was created which provided for only a three years course, but the former requirements as to science instruction were withdrawn and the aim now is to continue the general education of the pupils and provide them with instruction bearing on their future vocations, but not of a specialized character. Such curriculum must provide "a progressive course of instruction in the English language and literature, in elementary mathematics, and in history and geography; drawing and manual work for boys and domestic subjects for girls must be included in every case as part of the general or special instruction." With some necessary exceptions admission is to pupils over 12 who have been at least 2 years in a Public Elementary School. The Schools must also be organised to give at least a 3 years course approved by the Board of Education, but this course may be extended if, in the opinion of the Inspector, the pupils would profit thereby, and a suitable fourth year course has been organized. Courses beyond the fourth year are not recognized in the distribution of the Government grant. In this way the Board of Education sets the highest limit for the courses of Elementary Education.

Such Higher Elementary Schools are established either by Local Education Authorities or by Voluntary Managers. In either case they are supported by Government grants and by local rates imposed under the authority of the Council. The Voluntary Managers cannot establish one of these schools without the consent of the Local Education Authority.

Further information regarding this field of education is given from page 80 to page 87 in Part II. of the Report, and also in Chapters VII., IX. and X. of this Part of the Report.

SECTION 5: SECONDARY AND HIGHER EDUCATION.

The distinction between Elementary and Secondary Schools was formerly in large measure a social one, but since the Act of 1902 this distinction is disappearing. Further, there is a tendency in England, as in France and Germany, to make the upper and lower age limits of Secondary Education 12 and 18 years.

The Board of Education is taking steps to enforce where necessary the definition of a Secondary School as regards the normal length of school life, and

normal leaving age. Several authorities have adapted, with effective results, rules by which parents undertake (in some cases under penalty) to keep children at the Secondary School either for the full school course or for a named minimum period, unless for some approved reason. The education authorities in one of the larger County Boroughs in the North of England lowered the age of candidates for Junior Scholarships to between 10 and 12, and require an undertaking that pupils shall not leave before the end of the school year following their 15th birthday. They have also established a system of maintenance allowances in suitable cases, extending to the completion of the school course, and will seek for the repayment of these allowances, and all fees remitted, in the case of pupils who without sufficient reason fail to complete the full period arranged for.

They hope thus to solve the problem of the flooding of schools with pupils who leave after a year or two, and hence cause a waste of a great part of the educational effort and expenditure.

Practically nothing has existed in England which could be regarded as a system of Secondary Education under State control. It is therefore almost impossible to say anything in general of work in industrial arts in Secondary Schools. The great so-called "public" schools, Eton, Rugby and others, have very largely retained their distinctly classical character. St. Albans is a notable exception in its giving much attention to science, practical mathematics, and industrial arts.

General Interest in Industrial Education.

Although system, in the way of organized uniformity of type and progression, has been wanting in the whole field of Secondary Education in England, and has but slowly developed in Elementary Education, the general interest in Industrial Education has been so keen as to have exercised a marked influence on the character of the work undertaken in the schools maintained for general education. Holding to a theory different from that prevailing generally on the continent, English educators have felt that it was undesirable and unwise to treat Industrial Education as a thing separate from general education. The theory that a trade cannot be taught in a school, and also that it cannot now be taught fully without a school, is tending towards such a correlation of technical work and cultural subjects that a form of general and vocational education is being evolved for the industrial workers which appears to be yielding satisfactory results and meeting with general favor.

Science, Drawing and Shop Work.

Through Government grants from about 1881, aid was given to local initiative in the organization of science schools of Secondary rank. In 1889 authority was given to the County Councils to aid schools of whatever kind in furthering Technical Education by local taxation, and in 1890 local rates were largely relieved by a substantial annual grant from Parliament. Through this aid and influence the Secondary Schools willing to develop the "modern side" have introduced

strong courses in science, drawing and shop work. Many schools of a distinctively industrial type, as the Central School of Arts and Crafts, London, have been developed in recent years. These are maintained or aided by public funds. But they are distinctly separate in their aim from the plan of general education, and are to be classed with the numerous and effective Technical and Evening Schools for the further education of those who have left the regular schools and, in most cases, who have already entered the ranks of industrial workers.

The Universities.

Inasmuch as Universities have set the standards (by means of examinations) and given an impetus to almost all educational methods, they have been dominating factors in the direction of educational effort. The Universities have also provided the training for the highest grades of teachers, have educated most of the leaders in scientific research and in public affairs in relation to education, and have stedfastly set forth their ideals.

The Oxford and Cambridge type has been supplemented by the rise in 1880 of Victoria University of Manchester, with which was affiliated, at a later date, University College at Liverpool and Yorkshire College at Leeds. In 1903 the latter two became respectively the University of Liverpool and the University of Leeds.

The University of Birmingham arose in 1900 out of Mason University College and took in the Queen's Medical College of Birmingham.

There are Universities also at Bristol, Newcastle-on-Tyne, Nottingham, Reading, Sheffield and Southampton.

At these 10 modern Universities there were 7,796 Day Students and 5,736 Evening Students in attendance in 1910. Besides these there were 9,600 Day Students and 405 Evening Students as Internal Students of the 31 Colleges and Schools of the University of London, about 3,800 Students in the 22 Colleges of Oxford and about 3,700 Students in the 18 Colleges of Cambridge.

Wales is served by University Colleges at Aberystwyth, Bangor and Cardiff. On the occasion of the opening of the new buildings for the University of Wales, His Majesty King George V, as Chancellor of the University, said: "We must look ahead and endeavour to be ready to meet all the requirements of scientific and intellectual progress. The imperative necessity for higher education and research is becoming more and more recognized."

CHAPTER II: TECHNICAL EDUCATION.

SECTION 1: GENERAL PROVISIONS.

Although England since 1837 has given State Aid for diffusing a knowledge of the Mechanic Arts and the principles of design, and had as early as 1815 encouraged such instruction in Mechanics' Institutes, her first attempt to provide for so doing through the regular school system was not until about 1860. The "Great Exhibition" held in 1851 in the famous Crystal Palace, London, by demonstrating the inferiority of English manufactures, resulted in the organization of the Science and Art Department at South Kensington, which made grants in aid of classes covering work in these branches.

In 1857 the Education Department was re-organized and made to include the Science and Art Deqartment.

In 1859 that Department established an examination for teachers, and those who obtained certificates of competency to teach could earn payments in proportion to the number of pupils passed. The instruction had to be given in a school approved by the Department, and local managers were required to guarantee for the school's support a sum equal to the Government grant.

From 1861, Government grants were made for work in both Science and Art in some of the Secondary Schools in which it was found readily applicable, where the modern side of education was developing.

Under the Act of 1870 the work in Science and Art was introduced into the upper grades of the Elementary Schools. In 1872 special programs were promulgated giving definite plans for this work in the schools, but as reported by the Royal Commission of 1895, "County Councils have generally found it unwise, if not impossible, in dealing with children of school age, to treat Technical Instruction as a thing separate from general Secondary Education."

Grants to Technical Education.

The Technical Institutions Acts of 1889 and 1891 authorized the levying of a local tax of a penny in the pound for Technical Education, and the Local Authorities receive also considerable revenue from grants under a Customs and Excise Act. Such grants are commonly known as the "Whisky Money."

In recent years the amounts derived from that source have decreased considerably, and the Government has promised to set aside a portion of the land tax to make up the deficiency. The Government also gives other grants for the support of Technical Education. These are paid to Local Education Authorities on the basis of work provided for and done.

Generous Aid to Industrial Arts.

Although it is not quite exact to speak of England's "system" of schools prior to 1902, it is fair to say that the schools providing for general education of Elementary and Secondary rank had often received, where disposed to utilize it, rather generous aid in the introduction and development of subject matter in Industrial Arts. The distinctively industrial bearing of the drawing and of the science work, wherever introduced, seems to justify rating these subjects as industrial. The impetus given to industrial drawing, industrial design, and industrial physics and chemistry, as these subjects were directed by the Science and Art division of the Education Department in the 70's, 80's, and 90's, is said to have meant much to England in the development of manufacturing industries through this last quarter of a century.

During the last twenty-five years the "Manual Training movement" had made itself markedly felt. The infant schools had developed simpler forms of handwork through the influence of the kindergarten idea. Woodwork for boys, and knitting and sewing for girls, made their way slowly into the upper grades.

Although great numbers of boys left school at 12 or 13 years of age to enter the ranks of the industrial worker, many had a foundation laid or an interest developed in the Science and Art work which brought them immediately into the Evening Schools or into the numerous supplementary day schools for continuing the work in science and industrial design.

Drawing, Design and Art.

Throughout England the Provincial Schools of Art are doing excellent work in forming popular taste, while the Elementary and Secondary schools are laying strong foundations by means of instruction in drawing, and in artistic handicraft.

Mr. Dalgety Dunn, in speaking before the International Congress on Drawing and Art as to the position of these subjects in Great Britain, said:—

> When we consider the extraordinary progress made in drawing during the past ten years, we may reasonably anticipate a further advance, due to greater cohesion between classes, simplified instruction, higher professional and practical attainments on the part of teachers, and an extended school age for pupils. . . . . Art teaching as a vital and necessary feature of public instruction is now generally recognized. In many ways our work has extended from the drawing of a few years ago; apparent difficulties have been smoothed away, and now nothing is heard of the impossibility of finding time for Nature and other kinds of drawing. . . . . Drawing, Modelling, Colouring are some of the means by which we may hope to develop and direct self-activity.

Existing Provisions.

In Technical as well as in popular education, England has been a laggard. In commerce and industry she had a long start, but not until she felt the pressure of competition from Germany and France did she face the question of providing educational opportunities for training her artisans. Until the great educational enactment of 1889, the Mechanics' Institutes were in the main the

only means whereby the working or the middle classes continued or supplemented the inadequate provision of the Elementary schools. These Institutes from the early days of the nineteenth century were the fore-runners of the present Technical Education.

The forms of provisions for further education are recognized under three divisions viz.—(1) Evening Schools and Classes; (2) Schools of Art; and (3) Technical Institutions.

Technical Education is now provided by Technical Day Schools, "Trade" Schools and Evening Classes, to which should be added the Central Schools and the Higher Elementary Schools, some of which provide courses with an industrial outlook, but without attempting instruction of a specifically technological character. The higher forms are provided for at the Municipal Technical Institutes, at many of the Universities and at the Imperial College of Science and Technology.

Practically all the English towns have well organized co-ordinated systems of Technical Education, but only such institutions have been featured in this Report as seemed to the Commission to offer specially useful suggestions for Canada.

SECTION 2: EVENING CLASSES.

A Characteristic Feature.

All authorities agree that Evening School instruction has been one of the most characteristic features of the English educational system. In no other country is greater zeal shown in the attendance at Evening Classes organized upon a purely voluntary basis. The educational facilities thus afforded are evidently appreciated more than ever by intelligent and vigorous young people, especially in the great centres of industry and commerce.

Dr. M. E. Sadler, one of the leading authorities on education in Great Britain says " I can find no country in which voluntary attendance at Evening Classes is so large in proportion to the adult population as it is in England and Wales."

In all the English cities visited by the Commission, Evening Classes were an outstanding feature. This remark, subject to local modifications, would apply to Great Britain generally.

Striking Facts and Figures.

The following figures show the position of Evening Schools under Government Inspection in England and Wales in 1906–7:—

Number of Evening Schools recognized by the Board of Education	5,933
Number of students in respect of whom grants were paid by the Government	551,968
Number of students who attended at any time during the year. (A student attending more than one school is counted once for each school)	736,512

The same in groups of ages at entry:

Between 12 and 15 years of age	132,898
Between 15 and 21 years of age	362,627
Over 21 years of age	240,987

The same divided according to sex:

Male	442,416
Female	294,096

Fees:

Number of students who paid for instruction	613,806

Number who received free instruction:

Admitted without fees	92,426
Whose fees were subsequently returned in full	30,280
Amount of grant paid by the Government	£361,596

Taking the population of England and Wales in 1906-7 (Statesman's Year Book) at 34,701,776, the percentage of attendance at Evening Classes would be 2.12, or over 21 per thousand of the population. There has been considerable increase during more recent years.

Views of the President of the Board.

The Rt. Hon. Walter Runciman, President of the Board of Education, in his address on the Budget in the House of Commons in 1910, stated that the work done in these Evening Classes covers a vast range of subjects, and the Board of Education was not prepared to exclude any subject providing that it came properly within the category of the classes and that any reasonable subject of real educational value might count for the purposes of the grant. He added that a great deal of the work was of the greatest value, instancing a visit to a technical class at Burnley where he found some of the best pure science classes in the United Kingdom, no fewer than four of seven scholarships granted in the Kingdom having been won by that school. He expressed the opinion that the work done in these classes must depend largely on the amount of time occupied by the student's daily work, and thought it was impossible for the student commencing work at six in the morning and continuing till 5.30 in the evening with short intervals for breakfast and dinner only, to have enough energy to take full advantage of the Evening Classes, the usual time allowed for these classes (six hours per week) placing a strain upon the students far beyond what they could bear. He had heard of some young students in Leeds breaking down under it He instanced places where they would have been able to attend such classes during the day by permission, and even encouragement of employers, citing Middlesboro', Manchester, Harwich, Birmingham, Coventry, Derby and Swindon. He thought a word of credit was due to the Admiralty for having led the way in this matter, because as early as 1843 they allowed some of the young persons working in their dockyards and shops to attend technical classes during work hours. Some of the railway companies are now taking this subject up with a degree of enthusiasm which does them every credit. Recently the Great Northern Railway Company have been insisting that in every case, boys

in their employ in London, of whom they have a very large number, should attend some classes, many of which are held during working hours. He believed that only by following this plan would it be possible to get into the schools the boys between the ages of 13 and 17 in such a way as to enable them to take full advantage of the facilities there offered them.

Provisions in London.

In London the Evening Schools tend to five fairly distinct types:—(1) The ordinary Continuation School, collecting the old scholars from neighbouring day schools, staffed as far as possible with teachers from those schools, and mainly concerned to keep those scholars together and prevent their losing what they have learned; (2) Higher Grade Continuation Schools often developing into the Commercial School, the scholars, generally from the better class of homes, being past the VII standard and coming to the Evening School with a definite object; (3) Polytechnics and Schools of Art where the apprentice or improver and also the skilled workman find the means of widening their knowledge and skill; (4) The Commercial School, where the clerk finds instruction in languages or commercial geography or the machinery of business; (5) The distinctively College work, represented by such Colleges as King's College, the Birkbeck, the London School of Economics and also by some of the Polytechnics and other institutions.

The University of Sheffield.

The following brief statement concerning the University of Sheffield is given chiefly to indicate the extent and character of the Evening Classes carried on by the University. There are 500 day and 1,390 evening students in attendance. Similar Evening Classes are conducted by other Universities.

Applied Science Department.

The reputation of the city of Sheffield as the birthplace of the iron and steel manufacture is one which the city fathers and manufacturers are most anxious to maintain. The intention of the Department of Applied Science is to train students in the best known scientific methods of producing steel. Evening Classes and week-end lectures in the surrounding district are co-ordinated with the Department.

The Department specially concerns itself with the application of Science to (1) Mining; (II) Metallurgy; (III) Commercial life.

I. Mining.

A. The work done *at the University* includes,—

(a) Degree Course, covering 3 or 4 sessions;

(b) Diploma Course, covering 3 or 4 years, during which students receive instruction concurrently at the University and at a colliery;

(c) Saturday Courses:—

1. Certificate Course in Mining, covering Mining, Chemistry, Mechanics, Mine Surveying, Machine Drawing, and Steam—2 years course, held on Saturday afternoons.
2. Electricity applied to mining—2 years course, held on Saturday afternoons;
3. Mining Teachers' Course, for practical men who have had a good training and wish to teach in local Mining Classes under County Councils—1 year, Saturday afternoons.

B. The work done *outside Sheffield* includes,—

(a) Saturday Course at Derby, similar to the one held at the University;
(b) Extension Lectures in Mining, Mining Chemistry, Mechanics and Physics;
(c) Work done in connection with local Mining Classes under the supervision of the University.

Applied Chemistry.

The Department of Applied Chemistry is closely allied to the Mining Department, Chemistry being an important and necessary subject for future mine managers or engineers.

The literary side of mining education is not overlooked, being as important as the technical side.

II. Metallurgy.

Students are not promoted in this Department until they have satisfactorily completed the Mining Course, although the two Departments are quite separate. A special feature of this Department is a Laboratory for the use of former students, who can come here to study problems which they have encountered in their daily work. This post-graduate laboratory is greatly appreciated.

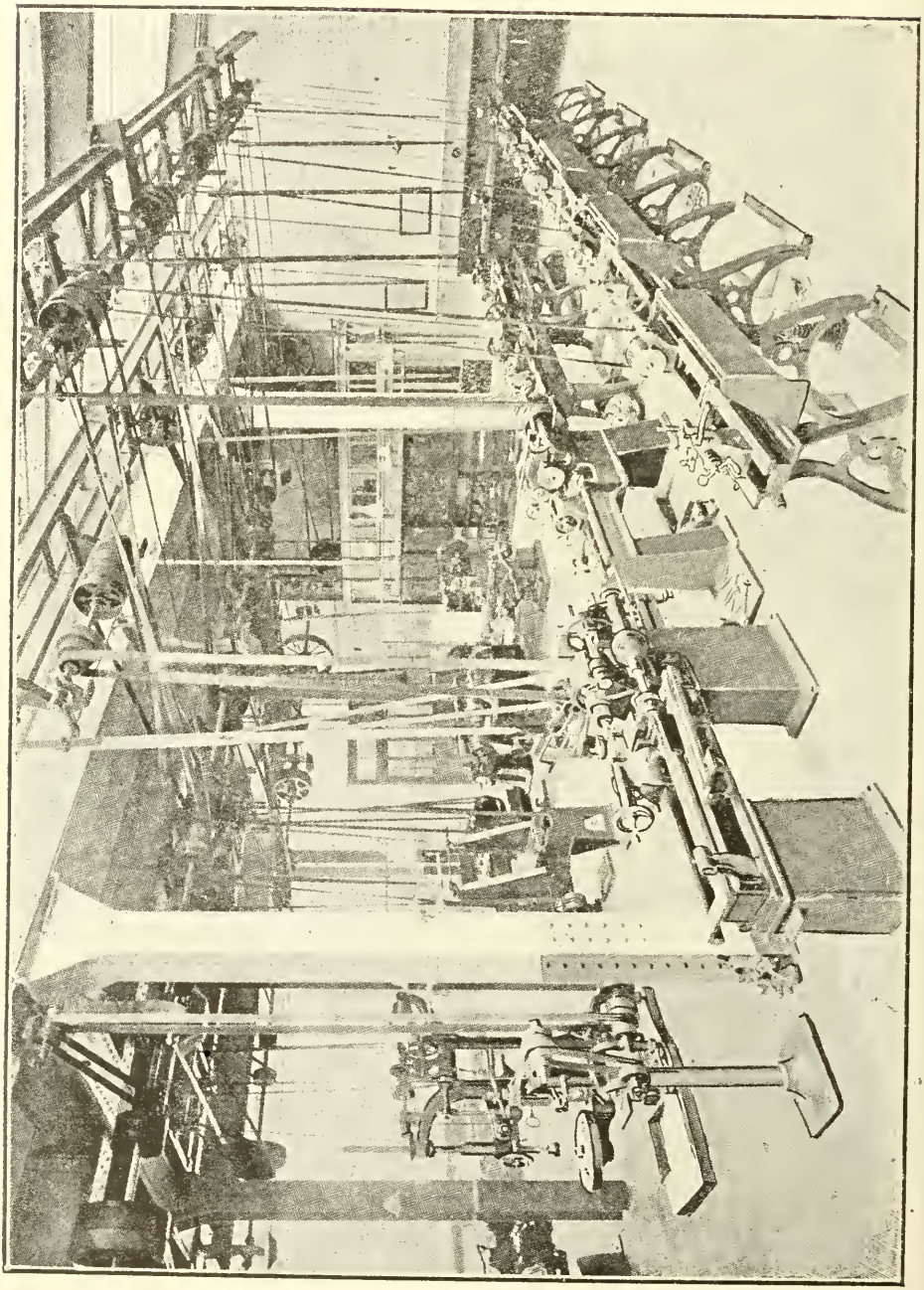
The equipment is ample and up-to-date, suitable for the requirements of students in every branch of this Department. There is a carpentering shop, in which students make patterns for the machines, of which they sometimes make the moulds in the foundry, cast and fit them up in the tool shops. The workshops include fitting shop, machine tool shop, woodwork shop and smiths' shop fitted up with the most modern machinery. The drawing office accommodates 80 students at a time.

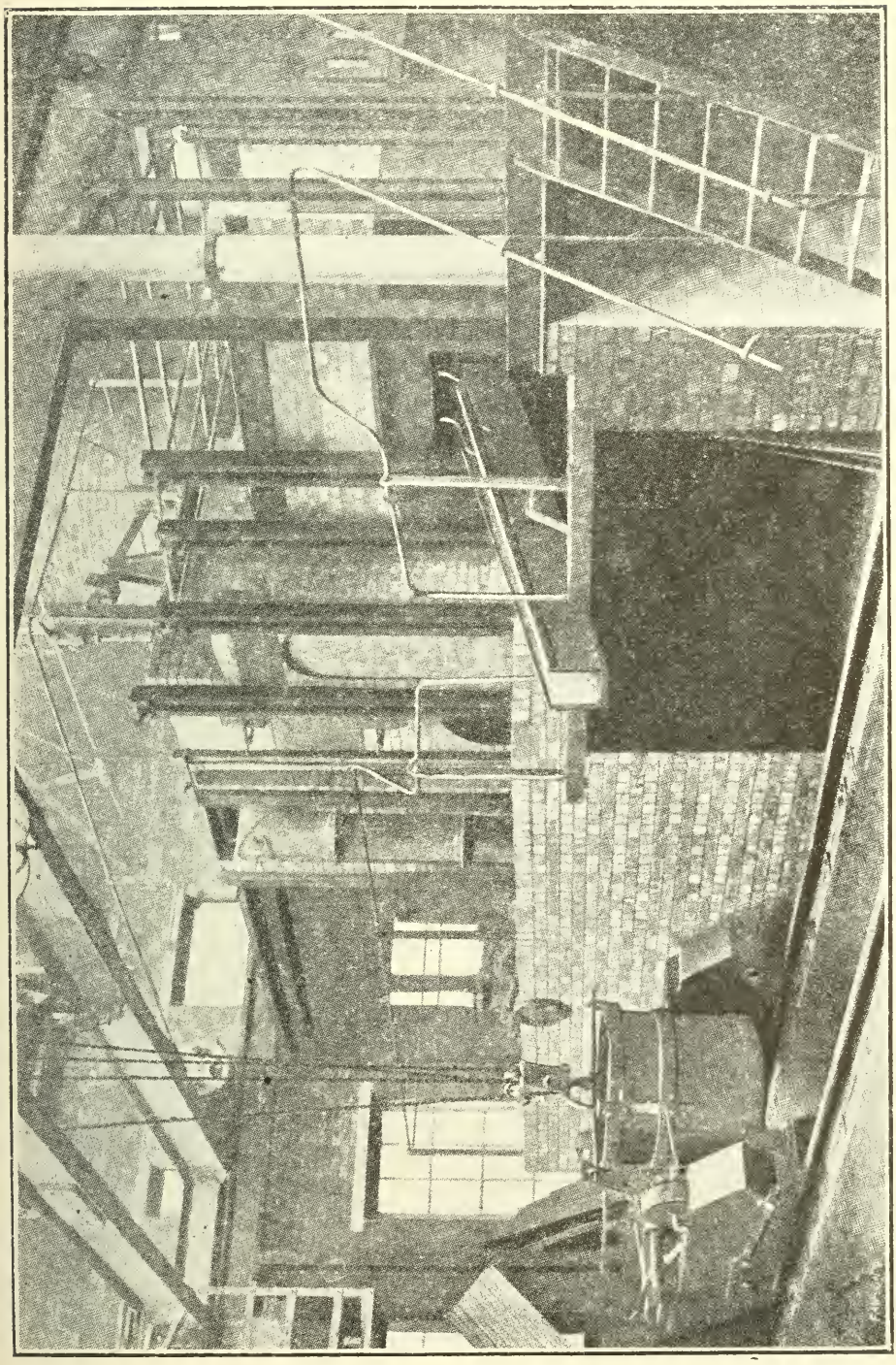
III. Electrical Engineering.

The Engineering Course covers 3 years, and includes attendance at lectures and classes, experimental work in the laboratories, and practical work in the drawing office, workshops and machine tool shops. The Department of Electrical Engineering has three electro-technical laboratories, one for each year of the Course.

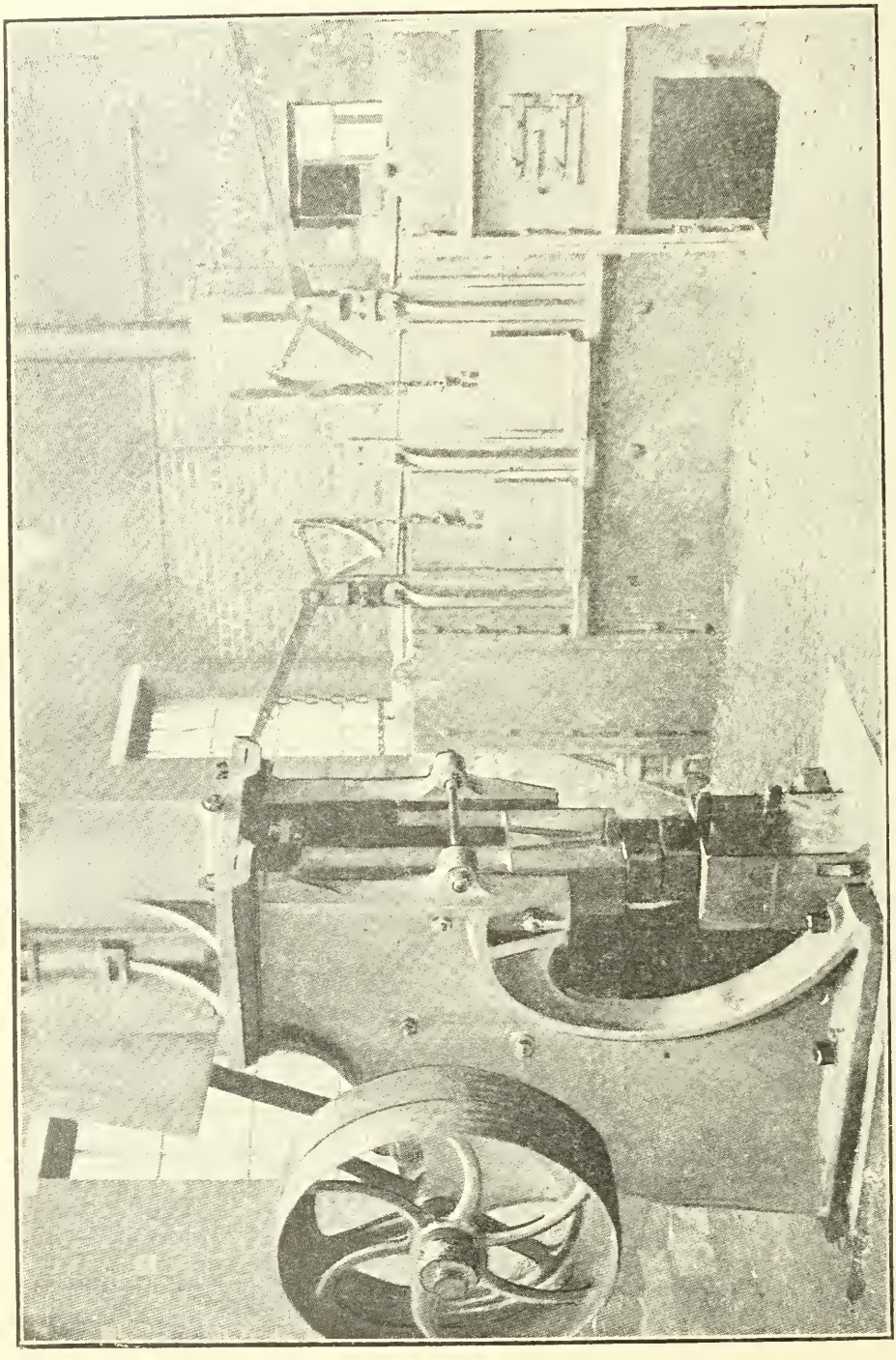
EVENING CLASSES.

The Evening Classes, which are a most marked and successful feature of the University, have full advantage of the organization and equipment of the Applied Science Department. Many of the students take the Associateship Examination.





University of Sheffield: 2-ton Siemens Furnace.



University of Sheffield: Half-ton Electro-Pneumatic Hammer and Re-heating Furnace.

1. Before going to the Examination for Associateship, they must furnish certificates of having attended during at least four University years a Course of Study approved by the University of not less than six hours a week.

2. They must satisfy the Examiners in five subjects selected from the following:—

1. Pure and Applied Mathematics.
2. Theory of Machines.
3. Strength of Material and Theory of Structures.
4. Hydraulics.
5. Thermodynamics, Heat Engines.
6. Civil Engineering and Surveying.
7. Civil Engineering Design.
8. Generation, Transmission and Distribution of Electricity.
9. Design of Electrical Machinery.
10. Theory and Practice of Machine Tools.
11. Machine Drawing and Design.
12. Geology.

Associateship in Iron and Steel Metallurgy.

To take this Associateship, applicants must furnish the Examiners with certificates of having attended three years of Day Classes or four years of Evening Classes, including, for Evening students, attendance of six hours a week.

They must furnish certificates of having passed in:—

1. Metallurgy of Crucible Steel.
2. Metallurgy of Cast and Wrought Iron and Siemens and Bessemer steel.
3. Fuel and Refracting Materials.
4. Geology and Mineralogy.
5. Mechanical Drawing (only required for Day Students).

They must satisfy the Examiners at the end of their Course in

6. Pyrometry.
7. Micrographic Analysis.
8. Chemical Physics of Iron and Steel.

They must pass an oral examination in 1, 2, 3, 6, 7, 8.

CHAPTER III: CONVERSATION WITH MR. FRANK PULLINGER.

Information obtained in "Conversation" with MR. FRANK PULLINGER, *Chief Inspector of Technical Schools for The Board of Education for England.*

The border line between Elementary and Technical Schools and Elementary and Secondary Schools has not been very sharply defined in England. The Board of Education finds it a difficult matter to deal with, but hopes the new regulations will make a better line of division than at present.

There are three kinds of schools for Industrial or Technical Instruction:— (1) the Evening Schools; (2) what may be called part-time Day Schools; (3) full-time Day Schools.

The latter are perhaps the most important, though not the most numerous. There are three grades of those. The first grade is for boys and girls who have just left the Elementary Schools, called Day Continuation Schools, which Mr. Blair will have called Trade Schools. In those schools it is hoped to have a continuation of the general education such as is given in Elementary Day Schools, and with it a definite instruction in trade subjects.

As a rule the Day Continuation Schools will make 12 years the lowest limit of age for entrance. It depends on the age in any particular town at which the scholars leave the Elementary Schools. In London they leave at 14, and some trades in London, especially those for girls, do not admit scholars till they are 14. The Borough Polytechnic admits pupils at 12. Arrangements must be made at those schools in accordance with different trades. For instance, a boy at 12 cannot be taught a heavy trade like engineering, for he is not strong enough, and such trades will not be taught; but trades connected with such industries as light wood-work, especially cabinet making, etc., could be taught to such boys. Girls could be taught laundry work, dressmaking, waist-coat making and such light trades.

DAY CONTINUATION SCHOOLS.

Under the head of Day Continuation Schools there will be a great variety of schools. It is not proposed to lay down any regulations as regards curriculum, but none of those schools will ever do less than 6 hours a week of Manual Instruction—that term including not merely wood and iron work, but laundry work, dressmaking, etc.—and some of them will do nearly twice as much, out of a total of 30 hours a week.

These schools will no doubt provide a good deal of teaching in manual work in wood and iron, but for the most part the curriculum will be rather general, with a decided bent in the direction of those studies which will be useful to the boy when, on leaving school, he enters some mechanical engineering trade. He will do plenty of Drawing of a very suitable kind—drawing from actual objects, first of all simple geometrical models, then from actual machine details of one kind or another that are found in various machines.

No doubt a good many of the Central Schools in London will be classed as Day Continuation Schools and carried on under the regulations for Technical Schools. Similar schools can be seen in Leeds. Those schools do not grow very quickly, having had little encouragement from the Board of Education in the way of grants. The Board's experience with them hitherto has not been very satisfactory, because to succeed they must be thoroughly appreciated and supported by employers, who have no very great faith in Technical Education. As a general rule the education must first be provided without the demand, which has to be created.

In seeking to bring about the attendance at the Day Continuation Schools of those who might be disposed to earn money, or whose parents might be careless about them continuing in the school. the arrangement preferred is one under which employers give first preference, in filling up the posts of apprentices, to lads who have been educated in these schools, where tolerably advanced work is done by boys who have remained there for three or four years.

Practical Teachers and Trade Atmosphere.

The headmasters of the Day Continuation Schools and as many instructors as possible will be drawn from the ranks of the Elementary teachers, but especially from men who have had trade experience. That will be one of the tests which will distinguish between a Day Continuation School carried on under the technical regulations of the Board of Education, and any other school, whether Secondary or Elementary.

In a Cabinet-making School, for example, the greatest effort will be made to secure that there shall be a thoroughly practical atmosphere in the school and that the staff for mathematics, science and the different advanced technical subjects shall be equipped by trade experience, and shall have been themselves trade apprentices. The proportion of the week's time to be given to manual or manipulative or trade work has not been settled.

Intermediate Schools—The New Apprenticeship.

Above the Day Continuation Schools there are a number of schools—which might be called Intermediate Schools, in which boys are admitted at 15 or 16 after having attended a Secondary School from the age of 12 and received a purely general Secondary Education. All Secondary Schools are supposed to have a certain amount of Manual Training, but it only comes to about two hours a week.

These full time schools for scholars of 15 or 16 are going to be very important indeed. Their main object is to give lads a two years' course of preparation for an apprenticeship which starts rather later than the usual apprenticeship, taken by boys leaving Elementary Schools. A great many of the better class workmen, foremen and managers, can afford to let their boys stay at school until 16 or 17, and then send them on as ordinary apprentices into the works. These schools will be able to do a good deal better work than the more elementary Day Continuation Schools, because the lads will have had a better preliminary education, and they will be staying at school longer; but of course the standard of instruction will not reach that of the Universities and large Technical Colleges. They will have definitely a two year course. As a matter of fact, there are very few places where employers will take apprentices when they are more than 17; and some engineering firms will allow two or three years in a Technical College to count towards the third year of apprenticeship. That is the sort of thing it is desirable to see extended. While it might be thought a boy at 18 would be very acceptable in industries after such a school as this, yet numbers of industries do not want such as those, for a boy who pursues his education up to 18 or 19 wants more salary than the average apprentice could get; and some engineering employers say that they can run their works on a very small proportion of highly-educated men. The graduates from these Intermediate Schools are the men who would, after experience in the works, become foremen and heads of departments, etc. The combination of school and workshop would be a new species of apprenticeship.

Full Time Technical Schools.

The captains of industry would be recruited from the next kind of full-time Day Technical School, namely, those which are held in Universities and in the best Technical Colleges, to which it is expected nobody will be admitted until 17 or 18. This kind of school is already in existence in a good many universities and big Technical Colleges, such as Northampton College.

These three different kinds of Day Technical School are in many places in England now very much mixed up. There is a very considerable tendency in schools which ought to be of the highest grade, in which there are not very many students, to admit boys who are not sufficiently prepared. In quite a number of cases the schools could not at present be classified.

The curriculum of the lowest grade of Continuation School should be prepared definitely for lads who are to be apprentices at 15 or 16, and cannot give enough time to general training in mathematics, science or literary subjects to be prepared for the next grade. The first grade of school would be very much like the Central Schools in London, with a bent towards industry or commerce. It is not desired to have boys going to the Central Schools and then on to the University, the ordinary avenue to which is through the Secondary Schools. A boy should get to the Secondary School from the primary at 11 or 12.

As regards co-ordination of these three different kinds of schools, the Day Continuation School will not as a general rule be a place of preparation for the

next higher grade, it being considered that every grade of day Technical Instruction should be preceded by full-time day instruction of a thoroughly general character. Thus a student preparing for the highest grade of Technical School would get purely Secondary Education at the Secondary School till 17 or 18, though in the last year or two he might devote more attention to mathematics or science than purely literary subjects. The desire is to see boys go to the intermediate grade of Technical School from Secondary Schools where they have been getting a purely general education till 15 or 16.

Although as a general rule every grade of full-time Day Technical School should be preceded by a purely general education, yet there must be exceptions such as in the case of boys who develop for the first time when they reach these technical schools; and if they develop, there should be no bar to them going on to the next grade of school. The teachers would have to be relied on for guidance in such cases.

Two Sorts of Highest Technical Schools.

There will be two sorts of Technical Schools of the highest grade: (1) That to which boys are admitted after four or five years in the Secondary School: (2) Another, intended for boys who started their apprenticeship between 14 and 16, have attended Evening Schools and then have been selected by rigorous tests as being sufficiently qualified to go on with full time day education for two or three years.

A scheme of that kind is going on at present on the North-East coast. A boy leaves the Elementary School at 13 or 14, goes into engineering works at once, and starts attending Evening School; then, at 18, the best of those lads are selected by the principals of the Technical Schools and the employers jointly. The employer has a record as to whether the apprentice is a satisfactory workman, a good time-keeper, and all the rest of it; the principals of the Evening Technical Schools have a record of his intellectual attainments, and between them they pick out the very best apprentices and give them a three years' full time day course. The Board of Education gives grants to those schools. In some cases the boy's employer pays his fees; in some cases he also pays wages; sometimes he may pay half wages, but wages are not paid to as great an extent as they should be. There are scholarships as well. That is the sort of school it is desired to increase.

The Sandwich System.

In an engineering town like Sunderland or Manchester, it is desired to have a boy stay at a Public Elementary School till 13, then go full time to a Day Continuation School till 16, then to the works as an apprentice attending Evening School, then have a chance of getting to another full-time school at 18, after two years in the works—the sandwich system. This latter school, having regard simply to the interests of the students, is a very different kind from the ordinary technical course carried on in the University and attended by boys

whose previous education has been in Secondary Schools; yet these artisan students at the places named do extraordinarily good work, and very advanced; they are first-grade students. They give their whole time to the day school for six months a year for three years after having spent two years in the works.

Part-Time Day Schools.

Part-time Day Schools, where employers arrange to let apprentices off for periods from two to four hours in the daytime, come next. These are a very varied class of school. In some cases the schools go on for one, two, three or four months in the year, the best examples of these being the Farm Schools, carried on in winter. It is hoped to have a considerable development of Building Trade Schools in winter, when these trades are slack. There are, perhaps, 100 part-time schools where employers allow their apprentices to attend school for half a day, one or two days, per week. There are schools for two hours a day, such as railway schools, from 7–9 in the morning, before starting work. In the School of Technology at Manchester, instruction is given on Mondays from 9 a.m. to 6 p.m., with an hour off for dinner, making 8 hours per week, the employers letting their apprentices off. Another school is in Harwich, near Bolton, the headquarters of the Bolton & Lancashire Railway Co., where they have two afternoons a week. In such cases the employers pay the apprentices their wages during the time they are in school; it counts just as though they were in the works. This sort of thing needs very careful organization. The mere fact that a lad is picked out by his employer as being a first-class apprentice and fit to attend school in the daytime for a number of hours per week generally gives that lad a better opportunity of getting higher wages. Cases have arisen where a lad has started as an apprentice under one employer, who paid his fee at the beginning of the session in September or October, and by January that lad had gone off to another employer and was getting higher wages. Such might be remedied by reserving part of the boy's wages till the end of the year. It may be taken as a rule that whatever time is given under this practice to school work is paid for. At the School of Technology in Manchester they have a similar course for plumbers and painters and decorators; at Middlesborough, in Yorkshire, they have a school of that kind, and at a good many other places.

Mr. Pullinger thought the best arrangement was to give instruction on one day of the week, especially on Monday, after the lad's week-end rest. At the Westminster Technical School, in London, there are part-time day classes for Gas Works apprentices of the London Gas, Light & Coke Company. These are young lads who have just left the Elementary School and become apprentices, and they do not all come on the same day, but have some sort of a shift arrangement.

Government Dockyards Schools.

One of the very best examples of part-time day instruction is to be found in the Government Dockyard Schools carried on by the Admiralty in all the dockyard towns. Before a lad can become an apprentice in a Government dockyard, he must pass an examination, and as the number of candidates is very large, the Admiralty have a pick of boys. When a lad gets into the dockyard he attends the part-time school for 12 hours a week—six hours in the day and six in the evening. At the end of the first year the Admiralty have an examination and weed out from their school about 50% of those lads as unfit for further instruction; at the end of another year they rule out 50% of the remainder. The result is that in the third and fourth year they have material of extraordinary excellence; and these lads, with 12 hours' instruction weekly, do splendid work. These dockyards have been going on for 60 years, and it is amazing to find that, with such an experience before them, other employers in engineering do not follow the example, for the Admiralty certainly would not do it unless it paid them. A boy must be 14 before he enters for the admission examination, and if he fails the first time, he can have an examination the year after.

Evening Schools.

As to Evening Schools, they are very numerous in England, and as good as they are anywhere. Mr. Pullinger did not like the notion of a boy working at night, especially the young boys. The leakage from one year to another in the Evening Schools is enormous, which, he had no doubt, was due largely to the fact that the lads were physically unfit to stand it three times a week for a couple of hours after working 10 hours.

In some towns the organization is excellent, and it has not been at all difficult to lay down a scheme of what the Department wants carried out. In the best organized towns there are preparatory courses for lads who leave the Elementary Schools rather prematurely—say, at 13—and other boys who have left the Elementary School and have neglected to go on to an Evening School immediately, but have allowed two or three years to elapse. In a few cases there are Preparatory Classes for people of 20 or 30, or even older, who have gradually dropped all their educational knowledge and attend school again to learn, in some cases, how to read and write and do simple sums in arithmetic.

Above these Preparatory Courses are what may be called Junior Courses, normally for boys and girls from 14 to 16, in which subjects of general education are continued, though these do not amount to very much, being carried on for only six hours weekly. The Board of Education intends to insist in future on English being continued for boys from 14 to 16, and that arithmetic should always have a place; but in the Junior Industrial Courses there are no definite technical or technological subjects. In the Northern towns the Industrial Courses comprise practical arithmetic and mathematics, instrumental drawing,

a little elementary science, in some cases English, and a little wood or iron work, so that it is really a general education with a very definitely industrial bent.

In the Commercial Courses, shorthand and book-keeping are taken, also English and arithmetic; in the Domestic Courses for girls, besides English and arithmetic, there are cookery, dressmaking and the like.

Speaking generally, these Junior Evening Courses for boys and girls between 14 and 16 should not be and are not of a definitely technological nature; they are really preparatory—to fit boys and girls to take up at 16 some definite trade teaching. Then at 16 and beyond, the courses for boys and girls may be called Senior Courses, being definite Trade [or Industrial] Courses. If a boy is an engineer, he goes on with some mathematics, and also does mechanics and machine drawing; next year he will have the same subjects carried on to a more advanced stage, or he may take up heat engines, motor-car work, or electrical work, or whatever his particular requirement is. Similarly in commercial work, a boy will begin what is called business methods or commercial correspondence and also take up a modern language.

Grouped Courses Best.

Where these Junior and Senior Courses are carried on in the best way, they are grouped, that is, they are carried on about six hours a week, and most of the students are compelled to take the whole Course as laid down. Before 1902, students were allowed to pick their own subjects at Evening Classes; engineering apprentices would take machine drawing and nothing more, or applied mechanics without having the fundamental knowledge for either applied science or mechanics. This was an immense disadvantage, and led to a serious dropping out in perhaps 20 lessons, when students would find they could not go on with the work. They are now required to take definite instruction,—either to take it all or leave it all. Statistics prove that one of the results has been a wonderful improvement in attendance. The boy who takes the necessary fundamental subjects is the one who will get a thorough grounding in his work and can go on to thoroughly advanced work; and as he can grasp it all, he retains interest in his work and stays on, not only during a particular session, but for years, taking three evenings a week.

Workshops in Schools.

There is not much opportunity for shop practice in six hours a week; for a great many trades there is very little workshop practice in the Evening Schools. That has to be gained in the works. All the evening Technical Schools contain workshops, so that if a lad, employed in a large engineering works on one job all day, finds that he is not getting the kind of experience in the works that he needs, he can put in some other nights in the week and get a knowledge of tools and machines that he does not use in the workshop. In addition to

this, however, he would be expected to take the standard Course laid out by the Board. The boys who attend the Junior and Senior Classes need not be apprentices, but no doubt 90% of them are, and they are all at work. There is no objection to anybody else taking this Course. In a few cases classes are confined to people in the trade on account of trouble between the trades unions and school authorities, but that is not general.

The Junior Course is two years, from 14 to 16, and the Senior Course three years. By the time a boy has attended both Courses, he is 19, and it is probably unnecessary to exercise compulsion on him to continue on his Group Course work. If he has been at all a satisfactory student, he will find it absolutely necessary to reduce the number of subjects studied, for in those advanced stages the study of some particular branch is really sufficient to occupy the evening student's whole time. It is anticipated that students beyond the age of 19 will be allowed to choose their own studies, with the help of the teachers and the school Principal. There are large numbers of students between 20 and 30 years of age.

Drawbacks to Course System.

One of the great drawbacks in evening technical work is that young men of 19, 20, or even older attend, who have done no educational work at all since leaving the Public Elementary School, and want to have some technical trade instruction, but are not willing to start and go on with the elementary subjects of science and mathematics. Some schools will not take students without being satisfied that they have adequate preliminary instruction; the authorities make other provision for such students. There has been no regulation of the Board of Education making it compulsory that there should be Grouped Courses, but a certain amount of encouragement had been given to that end through additional grants. The Course system did not become general, even in the North of England, until 1903-4, and it is not now fully in operation in the South of England and the Midlands.

CHAPTER IV: CONVERSATION WITH MR. ROBERT BLAIR.

Information obtained in "Conversation" with MR. ROBERT BLAIR, *Chief Education Officer*, LONDON COUNTY COUNCIL.

The first landmark of recent times in English education is the Act of 1870. The next is the Act of 1902. These are the two great legislative Acts in modern English education. The former made Elementary Education public and afterwards made it compulsory and free; it established Elementary Education in its present public form, the governing bodies being School Boards; the latter Act gave power to organize Secondary Education, and made County Councils and County Boroughs the authority for education, which was a great change in the character of the authority and also of the powers given to it.

In London up to 1904 there was a School Board which looked after Public Elementary Education, and the Technical Education Board of the County Council which had existed since about 1890, which looked after Technical Education. The Voluntary Schools were not under any common government; but the School Board Schools, and then the Secondary Schools, were all placed under the County Council by the Act of 1903, which made the general Act of 1902 applicable to London, and also made some other modifications for London. In 1904 the London County Council came into power with these three amalgamated powers and also additional power to co-ordinate all forms of education in London. So that the London County Council as local educational authority is concerned not only with Elementary Education, but with Secondary, Technical and University Education. It is not the responsible authority for the University, but it aids the University both on its technical and academic sides to such an extent now, and in future will aid it so much, that it will have a very large influence in University Education in London.

HIGH SOCIAL PURPOSE IN EDUCATION.

The County Council has had only seven years' control of education and the London people think the rates have gone up enormously in that time. Mr. Blair admitted that they had to a certain extent. The whole of the Elementary School system was permeated, he said, with a strong influence of recently developed high social purposes finding scope for its activity in medical inspection, medical treatment, fresh air and greater attention to feeding, cleanliness and future occupation. This social influence has resulted in the organization of what are known as "Care Committees" which have no less than 6,000 voluntary workers. The work has been divided up into three departments as follows:

(1) *Medical Inspection and Treatment*:—All entrants and leavers of Elementary Schools are medically inspected, and this results in medical treatment every year of 100,000 children, which is about one-sixth of the total. In Mr. Blair's opinion this is bound to have a very important effect on the future of the schools.

(2) *Feeding of Children*:—At the worst periods of the year, 55,000 or 60,000 children are fed at the public expense under all sorts of arrangements.

(3) *Juvenile Labor*:—The Board of Trade is developing Labour Exchanges not only for adults, but for juveniles, and the latter will be connected with the schools.

London's School Population and Scholarships.

The administrative County of London, which Mr. Blair serves, is not quite the same as what is popularly known as London, the latter being really Greater London, with perhaps seven millions of people. The London County Council is the local education authority, with a statutory commission to promote the general co-ordination of all forms of education within the County area. This administrative County area with its four and three quarter millions represents but a part, though much the larger part, of what is popularly known as London. There is a daily attendance in the Public Elementary Schools of 650,000 children, mostly between 5 and 14 (the years of compulsory attendance).

The Council's annual expenditure on education approaches £6,000,000.

In public or semi-public Secondary Schools (some maintained, some aided, and some not aided by the Council) there are on the roll 30,000 pupils, the nominal leaving age varying from 17 to 19. One important feature about the Secondary Education is that it is not free except to those who by proved ability in the Elementary Schools win scholarships which put them in position to take full advantage of it. These children, about 1,700 boys and girls in equal numbers, are selected every year from the Elementary Schools at 11 or 12 years of age on a basis of examination modified by reports of head teachers which involve school records. The teachers' reports are specially useful at the tail of the 1,700 when it is a question whether a boy should be in or out. The scholarships give them five years for Secondary Education, all they have to do being to satisfy normal conditions year by year in order to continue. A scholarship means not only exemption from fees but maintenance which enables the parent to go without the child's wages. There are about 8,000 such pupils in the Secondary Schools.

On the top of that, towards the close of 16 or 17 years of age, intermediate scholarships enable a child to stay on till 18 or 19, these scholarships being of better value, but fewer in number, about 300 a year, the total number of scholars now being about 690.

On the top of this another system of scholarships takes boys and girls to institutions of University rank, such as Oxford, Cambridge, University College (London), Imperial College of Science and Technology, etc., there being no limit to the institution except that it shall be of University rank. These schol-

arships may not be worth more than £90, and may be down to anything, but as a rule they are made equal to about £150 for a boy at Oxford or Cambridge, or £130 for a woman. They are worth a little less at London where the Colleges are not residential.

Free Secondary and Technical Education.

Secondary and Higher Technical Education and ordinary University Education are thus being really made free to all those who can make first-class use of them; and the Council is giving such maintenance scholarships as enable the poorest boy or girl to be put on a footing at the University with the ordinary student, in regard to clubs and games, etc.

There has to be a declaration of lack of means; all that is investigated and there are certain limits of income all the way through. The Seniors, that is those for the University, are not selected on examination at all, but on record; Juniors and Intermediates on examination.

Attending the Secondary Schools, with the 8,000 or 9,000 who obtain scholarships, are other scholars who do not possess scholarships. The endeavour is to avoid invidious social or other distinctions, though Mr. Blair was afraid the effort had not been quite successful.

The County Council says to these junior scholars: "These are the approved schools, fit yourselves in". The parents make the selection of the school. A scholarship enables a boy or girl from whatever home he comes, to get the very best education available.

Social Grades Discouraged.

Asked as to whether these scholarship students were segregated in a class by themselves, Mr. Blair replied that one might say "Yes" or "No" to the question. They were not segregated because they had scholarships though it might be that segregation prevailed to an extent. The idea has been to try and mix the two together, hoping that the scholar of lower social grade would learn something from the higher social grade and that he would also bring something into the school that the other fellows could learn from. The Council had done all it could to obliterate distinctions, and if they thought that a school fostered a social class that kept by itself in that way, they would strike the school off the approved list. But a Secondary School might want to classify in Latin or French—a subject that had not been taught in the Elementary School—and they might put these scholars in a Latin class by themselves and intensify the teaching of Latin for a time. The idea of the Council was that the "scholarship" element should get lost in the school, but the difficulty is that the boy does not always mix successfully.

Three Classes of Schools.

In the organization of Secondary Education in London, there are three classes—aided, non-aided, and ordinary. There are twenty of the Council's own Schools; another set, classified as Aided Schools, to which the Council gives £80,000 a year in Grants; then Non-aided schools, such as the Merchant Taylors', St. Paul's, and the Girls' Public Day School Company. On the Technical side there are also maintained schools; Technical Institutes, Schools of Art, etc.; also aided schools, such as the Polytechnics and the Schools of the University, including the Imperial College of Science and Technology which the Council aids with £8,000 a year, and which is increasing. There are not many non-aided Technical Schools; nearly all belong to the class of maintained or aided schools, the aid given to Technical Schools being about £80,000 a year.

As a rule, aided schools, Secondary and Technical Schools which receive grants from the County Council, also receive aid from the Board of Education; the aided schools and also the Council's own maintained schools get grants from that Board. The non-aided schools do not get grants either from the Board or Council, because they want to stand quite free. Mr. Blair thought it a very good thing for London to have the non-aided, the aided and the maintained schools working side by side. He thought it would be quite a mistake to try to make the whole thing of one common shape all over London; it was far better to let those two or three different kinds live alongside each other,as one set of schools could learn a great deal from the others. The maintained schools are probably better off in respect to all material provisions.

Evening and Trade Schools.

In the Evening Schools there are about 160,000 students belonging to all kinds of occupations, over 40% being females. No one can understand the system of Technical Education in England who has not fully grasped the meaning of the Evening School work. In these Evening Schools are to be found those students who have felt most the need of education, those who are prepared to make the greatest sacrifices for it, and consequently those who gain most benefit from it. The efficiency of the system is, however, limited by the exhaustion of the long day's toil before the Evening School begins, but the best of this Evening School work cannot be beaten. There are also some 20,000 pupils (11 to 15 years of age) in some 60 schools of a higher primary character called Central Schools. Each of these schools has an industrial or commercial bias.

As to Technical Education, the biggest Technical Schools excepting the Imperial College, are the Polytechnics. On their governing bodies are men who conduct industrial establishments. Mr. Blair admitted that the Council was not nearly as well related as it should be to industry and commerce, but this feature is being developed through so-called Trade Schools, which furnish a substitute more or less for indentured apprenticeship which has broken down. In London everything is differentiated: there is enormous competition

and sub-division so that a man does not make a chair but chair legs, and perhaps not even all the work on them: and while he acquires extreme skill in the making of chair legs, if anything happens to dislocate the furniture industry he is done; having been making chair legs all his days, he cannot make a tin can. What is required is character and a sort of genius for adaptability, so that if he is turned off chair legs he will be able to make tin cans. London is trying to do that by modifying largely the old-fashioned curriculum of the ordinary school, giving it a commercial or an industrial bias.

At the top of the elementary system are the 60 Central Schools which collect the children from various Elementary Schools at the age of 11 to 15 and give them an education with industrial or commercial colour or bias. Then there are the Trade Schools [mostly trade preparatory schools] for boys and girls, these, with one exception, being the product of the last five or six years. All teachers, except those who give mathematics or English, are trade teachers; the Committee is made up of the best trade experts that can be procured; and the boys turned out of these schools find places almost immediately in the trade or industry concerned. These Trade Schools have been established for those who have not yet entered upon an industrial career, but who are prepared to give an undertaking to enter specific skilled occupations at or about 16 years of age. The output of these schools must not exceed the industrial demand. That is not yet large, but there is a notable increase on the women's side. It will, however, take some years for recognition of the value of the Trade School training to secure a firm hold on employers generally.

Trade Classes and Trades Unions.

In Evening Schools the trade classes are open only to those in the trade —workmen or apprentices— and that is really an agreement with the trades unions; that is, only a bricklayer can join a bricklayers' class; the ironmonger's man is not allowed to join the plumbers' class, etc. If a man wants some training in woodwork, but is not a carpenter, he cannot join the carpenters' class, but is put in the Manual Training class, where there is just woodworking with tools. For 10 or 15 years the Council has had very little trouble with trades unions. It does not matter whether a pupil belongs to the union, but he must be in the trade. The Council judges from investigation how many the trade can absorb, and trains them in that trade for local absorption. The Council would not take the stand that it was not right to train them for other places, say the colonies, because of the expense to London itself; on the contrary, they would be very glad if a boy were able to become a silversmith in Toronto, for example. As a rule however, the boys have no thought of getting places anywhere except near home. These classes are only 5 or 6 years in existence, and are just developing, hence care must be taken that the boys trained are placed, so that parents will have faith in the schools.

The London Trade schools vary considerably in their objective and in the character of the work done. Those for boys are of two kinds: (*a*) Preparatory Schools for allied groups of trades, *e.g.*, woodworking, engineering, building

trade, book production; and (*b*) those training for particular trades, *e.g.*, silversmithing, tailoring, cooks (men), and bakery. The girls' Schools all aim at providing preparation for particular trades, viz., dressmaking, retail and wholesale ladies' tailoring, waistcoat-making, millinery, corset-making, upholstery, laundry, cooks (women), embroidery, and photography.

For those who can secure a half-day or two half-days per week of "time off" from their daily employment "part-time" classes are provided.

Consultative Committees for Trade Schools.

The success of the schools is largely attributable to two salient features of the system;

(1) The thoroughness of the investigation which is made into the conditions of a trade before seeking to establish a school or a class. Information is collected by the organizer by personal visits to employers of every kind in each industry; workrooms are seen and foremen and workers as well as heads of firms are consulted. The inquiry is in fact pursued exhaustively until the organizer has a full understanding of the existing conditions of the trade, the likelihood of their permanence (geographically or otherwise), and the kind of skill that modern industry and modern social life are demanding . Every possible step is taken to make co-operation with employers a reality.

(2) The appointment of Consultative Committees of experts. The functions of these committees are solely advisory. They advise in the selection of the trade teachers; in the apparatus and scale of the operations. Either singly or collectively, they visit the schools, inspect the work, offer criticism on the work of the students in their presence, and do not spare them praise or blame according to their merits. In this way the school and the trade meet on common ground and each learns from the other. The members are chosen not only for their knowledge of the trade, but also because of their interest in the social uplifting of the workers. The composite nature of the membership of these committees has been one of their great values. Formed as they are of representatives of the Masters' and Workmen's Associations, members of City Companies connected with the craft concerned, members of important arts and crafts organizations, and of those engaged in the distributing trades, the bringing together of such men, holding as they often do divergent views on art and technical training, yet keenly interested in its advancement, has resulted in an interchange of ideas and an appreciation of ideals which have frequently been productive of most useful suggestions for the development of the work. On the one hand there are among them those who contend that the training should be entirely utilitarian, and that the classes should merely provide such training as cannot be given in the workshop, or as may be required to meet the demand of the fashion of the day. On the other hand there are those who represent the æsthetic side, who are equally insistent on the primary importance of training in the traditional styles of art, and a knowledge of the history of the crafts concerned; on the necessity for training students to apprehend wherein beauty exists; and the fostering and encouraging of individual expression of ideas. These urge that the schools should not only aim at training highly competent workmen, but

should also be a means of cultivating a taste for beauty, and of diffusing a sound knowledge of craftsmanship, and of thus becoming a lever by which the general standard of æsthetic taste, not only of the worker but also of the distributor and the purchaser, may be slowly but surely lifted. The interchange of ideas thus rendered possible by these meetings not infrequently results in the recognition of the value of technical training from both these points of view, and of the formulations of proposals for securing these ends.

Boys' Trade Preparatory Schools.

The object of all the boys' schools is to prepare boys to become intelligent workmen, with a fair chance of occupying later on the better paid positions. The schools do preparatory work for which there is no time under modern workshop conditions, and send into the shops youths who have been taught to use hands and brains, and who will be in a position to make the utmost use of that experience which the workshop alone can give. The whole school atmosphere should be creative of a pride in workmanship and of faith in the power and value of the craftsman.

The general education given should, broadly speaking, spring out of and be related to the trade instruction. It should induce the reading sense, so that students may independently seek information related to their crafts or trades. It should also seek to develop, at all events in the better students, the critical attitude towards quality of workmanship, the general life and thought of the craft or trade, and especially the industrial and social conditions under which the craftsmen live and work. Art is in one way easily related. The silversmithing boy or the young architect will draw objects or examples of the goldsmiths' or silversmiths' or architects' work. But the relation must be carried further whatever the object, *e.g.*, if a chalice, its purpose should be described and some time devoted (with examples or sketches) to showing how its fashion has followed the art of the times, and so on.

Mathematics is not treated too ambitiously. A few fundamental principles well driven home are considered worth a hundred tricks. The science master who cannot show at once how much and why his curriculum differs from what he would propose for an ordinary Higher Primary or Lower Secondary School is regarded as misplaced.

The work in history and literature should give the best of the students the historical sense which will enable them to appreciate the part their craft or industry is playing in the development of civilization, and should induce them to explore the masterpieces of history and literature where the great craftsmen have so often found inspiration for their work.

Teachers of sufficient interest, originality, persistence, and sufficiently capable of applying the ordinary subjects of the curricula to each new trade included in a school's objective are by no means readily found; and this difficulty is an additional reason for the slow development of the system.

How Time is Apportioned.

School-time is apportioned about as follows:—

In furniture trades workshop instruction, including workshop drawing, occupies in the first, second, and third years of the course, roughly one third, one-half and two-thirds respectively. Of the remaining time, one-half is devoted to instruction in science, mathematics, and art, and one-half to English. In engineering schools about one-quarter of the whole time is spent in the workshops; about one-half to instruction in related subjects, such as drawing, mechanics, and mathematics, and less than one-sixth to English. In the School of Building (Brixton) boys taking the trade course, as distinct from the professional course, spend rather more time in the workshop, but in no case does the time spent in the workshop exceed half the school time.

The School of Bakery at the Borough Polytechnic is in the main attended by the sons of Master Bakers.

The last of the schools to be established is a school for boy cooks. The work of this school is guided by an advisory committee of expert chefs. The object of the school is to instruct youths who desire to become professional cooks and to train them by scientific methods in all branches pertaining to cookery and the making of pastry and confectionery. The kitchen is fitted up like the kitchen of a good hotel. The course of instruction lasts for three years.

The Beaufoy Institute gives rather more time to English and general subjects and rather less to science, mathematics, and drawing, as the boys are younger than in the other schools. In the Schools of Artistic Crafts between 9 and 10 hours a week are devoted to drawing and modelling. The artistic craft schools and the school for boy cooks stand in a somewhat different position from others, for in these occupations craftsmanship counts for more than in heavier trades, and a case can be made out for the devotion of rather more time to workshop practice.

A more detailed description of the work of one of the schools will serve to illustrate the nature of the work. (See School of Building, Brixton).

Girls Trade Preparatory Schools.

There are six day Trade Schools for girls in London. In addition trade training is given in three schools for physically handicapped girls.

These schools provide instruction in eleven different skilled trades which afford opportunity for efficient women workers to rise to positions of responsibility, which have been found to require a constant recruiting of skilled workers, while affording within themselves insufficient means of training young workers, and which lend themselves to class teaching.

The task of a Trade School for girls is not merely to teach the manual skill required in the trade workroom, but to supervise the development of the young worker both in health, trade knowledge, and character, so that she may be fit to hold her own in the industrial world.

Description of Bloomsbury School.

A description of the work of one of the Trade Schools (Bloomsbury) will give an idea of what is being attempted. The classes range from 16 to 20 in number. The school hours are from 9-5, Saturdays being free. Four needle trades are taught, viz., dressmaking, ladies' tailoring, corset-making and lingerie, and millinery. Photography is also taught. The course lasts two years. A girl can in this time only be trained for one trade. The age of admission is from 14-16. Girls enter either by scholarship, by award of free places, or by paying a fee of 30s. a year.

Of 170 girls attending about half are promoted scholars, and the rest fee-payers. No girl is admitted who does not undertake to stay two years and to enter the trade at the end of the course. The school authorities reserve the right to exclude any girl who proves incapable of attaining a certain standard of efficiency, or to change her trade if advisable. The first three months is a probationary period during which the pupil is carefully watched, and her suitability for the trade she has chosen is gauged. The importance of a right selection of trade cannot be over-estimated, and the school serves a useful purpose in selecting, as well as in training, girls for the work best suited to their capacity.

The trade teaching is in the hands of teachers who have obtained their knowledge of the trade in first-class business houses. As far as possible in a classroom, workroom conditions are set up. The equipment and arrangement of the room is similar to that of a trade workroom. Workroom methods and trade standards of work are adopted, except that whereas in a workroom many combine to produce one article, in a classroom each girl is responsible for and required to carry through all the processes of the article she makes. Very little formal work is done; as far as possible all completed work is real work made for a particular purpose. A record is kept of the trade work of each girl and of the time spent in producing it. Throughout the course, each girl is made to bear in mind that she must in the end have a market value, and for the credit of the school this must not be below the average agreed upon. It is recognized that speed must be combined with skill if the latter is to command a price.

The trade school is kept in as close connection with the trades as possible—members of the trades visit the school, inspect and criticise the work of the girls in their presence, and do not spare them praise or blame according to their merits. The connection with the trades is becoming closer as the school becomes more firmly established, and the girls who pass through the school pass into the trade workrooms.

About two-thirds of the school time is devoted to trade work, the remainder being given to art and general education.

The art teaching, English literature, industrial history, composition, arithmetic, and hygiene lessons which, together with physical exercises and singing, fill the rest of the school time, are all arranged as far as possible to supplement the trade training. The literature lessons are aimed at awakening a love of

wholesome reading, the history at making clear the system of which the industrial worker forms part. Composition lessons include business correspondence, and arithmetic lessons deal with workroom problems. Hygiene lessons are aimed at being of a practical work-a-day kind, dealing in the knowledge of personal and public health, which should be familiar to the worker.

Securing Positions for Girls.

Careful records are kept of each girl's antecedents, her progress through the trade school, her physical condition and development, and her subsequent career. After she leaves every effort is made to keep in touch with her and, with very few exceptions (*e.g.*, girls who have moved away from London), the lady superintendent of the school is able still to watch the fortunes of her old girls. An old girls' club flourishes, which meets at the school. Arrangements are made for the senior girls to be present at old girls' meetings, in order that they may learn direct from their former schoolfellows what the work-a-day world is like.

All firms applying are visited by the trade teacher, who, in consultation with the lady superintendent, picks out the girl she considers suitable for the vacancy, and offers her at the wage she is judged to be worth. It is found that a girl's career depends greatly on her making a successful start in her first place. The experience of the trade teachers proves invaluable both in judging of the suitability of the places found and in helping the girls to meet difficulties and discouragements they may first encounter in the workroom.

The trade school course enables girls to enter the trade workrooms as junior assistants; thus stepping over the earlier stages of apprentice and improver.

Each year it is proving more easy to find places for the girls and a larger field of employers are anxious to engage them. The initial wage tends to rise. The first years that girls were placed out, 8s. or 10s. was the average. This year 12s. and 14s. have been received in many cases.

Girls who have passed through the school appear to have no difficulty in keeping in steady work and in getting promotion. They are favourably commented on both for their workmanship, good manners and reliability, and in cases, where several have worked together, for the improvement in the tone of the workroom. In many cases they have encountered jealousy, but in very few have they been unable to live this down. Employers who have had trade school girls send back for more. In several cases this year girls have left the trade school to work under their former schoolfellows, now promoted to be first or second hands.

It was found in the first years of the trade school that not a few girls after leaving the school broke down in health in the strain of the workroom. Increased care is given to physical fitness. All girls are examined on entry, and re-examined at intervals during their trade school career. Parents are required to get carried out necessary treatment advised by the school doctor. Eyes, teeth, crooked backs, &c., are attended to and opportunities for remedial exercises are given in school. The improvement in physical well-being of

the girls during their sojourn at the school is very marked. The school aims at keeping in touch both with the elementary and other schools from which the pupils are drawn, and also with the parents of the girls themselves. Two or three times a year an open day is held for head mistresses and other teachers who are invited to bring intending pupils, as well as for the parents and friends of the girls. Exhibitions of work to which the trade are invited are also held annually.

Cost of Girls' Trade School.

The L.C.C. Trade School for Girls, Bloomsbury, for the session, 1909-10 (173 students), cost per head, gross £21.2s.6d.; net, £14.8s., as follows:—

Receipts.	£	Expenditure.	£
Sale of materials	164	Equipment	29
Fees	63	Materials	523
Stock in hand (estimated)	160	Salaries	1,829
Grant (estimated)	685	Other expenses	79
		Scholarships (85)	876
		Establishment charges (not including loan charges on buildings)	318
	£1,072		£3,654

Polytechnics Too Big for Efficiency.

Mr. Blair's view is that the big Polytechnics have become just a little too big, and if they contain Schools of Engineering, Printing, Bookbinding, Building, etc., he thinks the interests of one school often have to give way to the interests of the whole, and that it is really better to have those schools taken out and managed separately. The Principal of a Monotechnic drives his school harder than can a Polytechnic Principal, yet the latter is the one who ought to push what Mr. Blair calls the commercial-traveller work between the schools and the firms, so as to have the two related. He believes that even the Universities are now trying to push a closer relationship with commerce and industry, and probably before long there will be a Bureau established in London with a man whose business it will be to see what is going on in all the industries.

London County Council Organization.

Mr. Blair gave an interesting sketch of the London County Council's organization for education.

The Council has 137 members, with Committees on Education, Finance, Highways, etc.; Education is so big, compared with the rest of the Council's work, that it is one half. The Education Committee consists of 50 members, 38 of whom are members of the Council and 12 are co-opted members—people selected from the outside to represent various phases of education; but the co-opted member is not a member of the Council, and when the Education Committee goes to the Council it is only 38 strong, whereas the Education Committee

in committee is 50 strong. The Council itself co-opts, on the recommendation of the Education Committee; but the co-opted member has not any powers on the Council. The members of the Council have to stand the racket of the general election, and they have important functions to fill. The Education Committee of 50 members meets once a week, the press and public being present; and its business is conducted more or less like the business of the Council—formal debate, formal management, etc.; in fact if it were not done formally they could never get through it. Then about 10 sub-committees meet every week to deal with Elementary Education, Secondary Education, Books and Appliances, etc. The committees are formed largely of members of the Council, and partly of co-opted members. The sub-committee meeting will last on an average two or three hours. These men are not paid at all. Some people of leisure and some means give twenty and thirty hours per week to the work of education; they like the work, and they devote their whole time to it. There are gains and losses that way. The people who devote their whole leisure to education are educationists. It is a good thing to have men to deal with education finance who are probably directors of banks, railway companies, etc.

It is a mistake when education gets away from life, and gets a place all by itself; it needs to be related to all phases of the community life. Some people in London are very anxious to have an *ad hoc* body specially elected for education. Mr. Blair thought that would be a mistake. The Council is growing so large that it will be like Parliament; but on the estimates every year they can debate any subject they like; and throw their influence on to those subjects. The Education Committee meets in public, but the main work is done in sub-committees, and sections of sub-committees.

The Elementary School has a statutory body of managers, selected partly by the Council and partly by the boroughs of London, of which there are 29 inside the county area. These boroughs have separate powers for certain things, but no power over education except to elect certain managers for individual Elementary Schools. It is not a very happy arrangement.

The numbers on a Board of Managers are usually a multiple of 3 to 9. Their powers in connection with the school are on the whole not large. They call for repairs and for things to be done on the schools. The architect reports on them, and they come through the architect's report to the Building Committee, which looks after the buildings as a whole.

Important Work of Care Committee

The Care Committee has activities, such as getting the child placed well, looking after the scholarships, and saying "Now, you must do this and that," and and if the children are bad,looking after them. Those Committees are nominated part by the management and part by the Council. Those six Managers nominate two. Managers can nominate another two from the list, and the central Care Committee nominates others.

If a child is neglected the Committee does not bring the child before the Council, but can prosecute before the magistrate in respect to neglect in feeding

or medical treatment, or being left wandering in the street, or not being clean. There are four kinds of prosecutions that the Board is engaged in almost daily-- for non-attendance at school there are probably 10,000 to 15,000 prosecutions a year, most of them successful, and the school-going habit has become a good one in London now—91% of the roll is present every day in our schools, and in some places it is up to 96 or 97 in Elementary Schools. When you have 91% of your roll in school you have got about to the limit.

Under the Children's Act there may be a prosecution for neglect for want of food, or neglect in allowing the child to run about the streets at night, and so on. Those are not yet very numerous. Under that Act if the Council thinks the parent ought to pay for the child's food, he can be prosecuted for it. First there is a demand made on him, and if not complied with he is prosecuted. Prosecutions have been fairly successful. There is a fixed price for each meal, say 8 meals at 1½d. each, and the bill is sent in for a shilling. If the parent is known to be in good work he is sued for the payment; in case of poverty from illness or other causes the Board meets that without any prosecution. Then the same in regard to medical treatment. For medical treatment there is a charge. The treatment is obtained; sometimes it is pretty costly, but on the average it costs about 5s. per case, and if the Council thinks the parent ought to pay, he is sued. It does not come often. Suing in respect of feeding and medical treatment has been so much labor that one wonders whether the moral effects secured are worth all the trouble, and the Council or Parliament will likely do away with the charge, which is really a block in the way of getting medical treatment.

CHAPTER V: TYPES OF INSTITUTIONS IN LONDON.

SECTION 1: CENTRAL SCHOOLS IN LONDON.

In addition to the Elementary Schools which supply the usual type of general education the London County Council has organized a number of Central Schools with a view to providing for those boys and girls who are to stay at school till over 15 years of age an education which, while being general, will have a commercial or an industrial bias. It is proposed that there should be about 60 such schools, and that they should as far as practicable be distributed uniformly throughout London. The pupils are selected from the ordinary schools when between the ages of 11 and 12, and are chosen partly on the results of a competition for scholarships and partly on the results of interviews with the head-teachers and Managers. A limited number of bursaries or scholarships tenable from the age of 14 to about 15½ are awarded to those pupils who need financial assistance to enable them to stay at school beyond 14. These schools are distinguished from the ordinary Elementary Schools by the fact that the pupils are selected and go through a complete four years course with a special curriculum. They are also distinguished from the Secondary Schools by the fact that they are Public Elementary Schools providing free education, and that the curriculum is framed with a view to enable pupils leaving school at the age of 15 to be in a better position to earn their living. The total number of Central Schools that had been organized up to 1911 was 39. Of these 13 have an industrial bias, 13 a commercial bias, and 13 a bias both industrial and commercial.

The Commission understood that it was the intention, when the Central School scheme is in full operation, to have the schools reserved only for pupils over 11 years of age.

The Commission visited a number of typical Central Schools, The following are notes of some of the features suggestive or instructive for Canada:—

West Square Central School.

This is a school for boys and girls. It is a centre with an industrial bias. About half of the whole time was given to practical or manipulative work, including Drawing. Out of 10 sessions per week 1½ were devoted to work at benches in the workshop. The bench work was with wood only. The Principal of the school would prefer wood-working during two years, and then wood and ironworking concurrently during two years.

The courses of study are grouped under several divisions, namely, Industrial History, Economic Geography, English, Mathematics, Handicrafts, Drawing. These are all closely correlated. For example, in the wood-working department the boys make the apparatus required in the science laboratory. The school is situated in a working district and is specialized towards industrial life. Other Central Schools at the differentiation period give both commercial and industrial instruction. This school leaves out the commercial. The Commission received a volume containing a statement of the schemes of work in detail, and illustrated by the pupils. It is a matter of some regret that space cannot be found for a representation of this document. Several hundred drawings illustrate the general syllabus for science, handicrafts and drawing.

Industrial History.

In the division of Industrial History, the following brief statements are given as illustrations of the syllabus:—

First year's Course: General Scheme: Outlines of general history 1066—1485, with special reference to the Doomsday Book and the Feudal system; origin and growth of towns and guilds; economic effects of the Feudal system; agriculture, the principal industries, manufactures and trades, England's monopoly of wool, the effect of the Crusades on foreign trade; the Black Death and its economic results; the Peasants revolt of 1381, and the subsequent conditions of the people at the close of the Middle Ages, 1472.

Then follow details of the syllabus and the mention of reference books.

Second year's Course: General Scheme: Outlines of general history 1485-1689 with special reference to trade and industries and the conditions under which the people lived; the conditions prevailing at the close of the Middle Ages and the great changes arising from the Wars of the Roses; the rapid growth of foreign trade owing to colonization; the increase of the mercantile classes and the revival of learning.

Then follow detailed particulars with mention of reference books.

Third year's Course: General Scheme: Outlines of general history 1689-1820, with reference to the "Bloodless Revolution" and its effects on industry and trade; the rising power of the Trading Classes; the acquisition of colonies and dependencies and the expansion of foreign and colonial trade; the transition from the domestic system of industry to the establishment of factories; the age of inventions.

Then follow detailed particulars with mention of reference books.

Fourth year's Course: General Scheme: Outlines of general history 1820 to the present time, with special reference to the industrial progress of the nation; the improved means of transit internally and with colonial and foreign ports; introduction of penny postage and the electric telegraph; the growing power of the industrial classes and organization; the general reform of social conditions; local government and extension of self government to the colonies.

Then follow details of the syllabus with mention of books for reference.

DRAWING.

In the division of drawing, free drawing and mechanical drawing are carried on concurrently during the whole of the four years. Free drawing from nature in the form of stems, leaves, flowers and shells goes practically hand in hand with mechanical drawing. In the fourth year the free drawing takes up the application of the forms of stems, leaves, flowers and shells to simple design, while the mechanical drawing goes as far as simple mechanical drawing as applied to machine construction, with Isometric drawing as applied to technical work.

A serious effort is made to shape the instruction so as to qualify the boys for the industrial life of the district. No attempt is made to qualify them

directly for the trades, but rather to give them a degree of familiarity with tools in general, besides the scientific elementary principles applicable to all trades.

Similarly girls are trained so as to be fitted for home-life. The girls' courses cover cooking, laundry, housewifery or house-keeping, dressmaking, needlework, or embroidery, and preparation was being made for the introductionof millinery.

Childerley Street School.

A detailed course of study was also obtained from the Childerley Street Central School. It is somewhat different from that of West Square Central School, and was framed to meet the conditions of working and living in its area.

At the Childerley Street School the children are drawn from 17 other schools between the ages of 11 and 12. The Commission was impressed by the evident interest of the boys and girls in their work. As a case in point, upon entering a drawing room where 25 boys were at work, instead of the presence of the Commission creating distraction there was only a casual glance of observation, then every boy went intently on with his work.

Other Central Schools.

Other Central Schools were visited. A volume would be required to contain particulars regarding all the good work carried on at them. The Commission was impressed by the enthusiasm, native ability, alertness and educational experience of the Headmasters and the Headmistresses.

Physical drill and music were in evidence, with boys singing what appeared to be difficult music in excellent harmony. Boys between 9 and 10 drilled with a precision of movement that was quite remarkable. In the physical drill of the girls more attention was directed towards grace of movement as illustrated in simple dances.

From one of the Central Schools it is reported that 70% of the boys enter industrial work. The Headmasters are in touch with employers and do their best to place every boy in a situation on the completion of his course.

SECTION 2: CENTRAL SCHOOLS—EVENING WORK.

Hugh Myddelton School (Clerkenwell).

At this school classes are held every evening except Saturday, attended by 400 to 500 students. The building is also used for social meetings, concerts, boys' brigade, and for Sunday School.

The Subjects covered in the Evening Classes are Mathematics, Book-keeping, Commercial subjects, English, French, German, Irish, Latin, History, Italian, Spanish, Welsh, Shorthand, Typewriting, Business Management, Economics, Art, Art (Teachers' Class), and Literature Lectures.

Organized courses of study are arranged, and pupils strongly urged to take a complete course instead of isolated subjects. No student under 18 is enrolled except for a complete course.

The teachers receive 7s.6d. per evening for ordinary subjects, 10s. 6d. for Languages, Law, and more advanced subjects. Some of them teach day classes under the London County Council; others are in business during the day.

There are no fixed entrance conditions, age and suitability being the only tests.

The School does nothing directly to find employment for pupils, but its certificate is a help to securing work. Chamber of Commerce pupils are referred to that body. Masters interest themselves in special cases.

The attendance is largely affected by overtime work.

The fees are small, being 2s.6d. a session for students over 16; 1s.6d. for those under 16, for one or more subjects; a charge of 5s. and 2s. 6d respectively being made for Art. Fees may be remitted in special cases.

Pupils are prepared for various public examinations, the Civil Service, etc.

Barrett Street Evening Commercial School, (Oxford Street, London, W.)

This School has an average attendance of 250 pupils a night for 5 nights a week from September to Christmas; after Christmas, 200. It originated under the old School Board, at the request of employers, some of whom had previously subsidized commercial classes. It has been in existence about 10 years, and is supported by grants from the London County Council and by fees, the latter being merely nominal, viz. 2s. 6d. per session for pupils over 16 and 1s. 6d. for those under that age.

The School is self-contained. The entrance requirement is the 7th Standard of an Elementary School. The staff prepare the curriculum to meet the needs of the neighbourhood, which is the central shopping district, occupied by large drapery and furniture establishments. The employers of the district encourage their employes to attend. The majority of the students are engaged in stores and offices, banks, etc., their ages being 20 to 30. The teachers are drawn from men engaged in office work, the instruction being entirely of a commercial nature. Each teacher is a specialist in his own department. The head of the establishment is an Elementary School teacher, and prepares the curricula after conference with the staff. Textbooks are furnished to the students by the L.C.C. at the lowest possible prices, and stationery is provided free.

The building is used as an Elementary Day School, and the equipment is supplemented for Evening Classes by special desks and seats. The caretaker is paid extra for evening work.

The teachers receive from 7s. 6d. to 10s. 6d. per night, according to subject, teaching $2\frac{3}{4}$ hours each night. Teachers must hold recognized certificates.

Students may compete with other London schools for 10 scholarships, tenable at the London School of Economics. The L.C.C. also give prizes in

the form of books. At the time of the Commission's visit there were 400 entrants for examination, of whom the responsible master expected three-quarters to pass.

The lessons are adapted to the requirements of students; Shorthand, Languages, etc., being given in the phraseology of the student's business. There is a Russian class for employes of firms doing business with Russia. One new subject is added each year. In 1910-11 English classes for foreigners were established.

The Vocal Class is affiliated with the Night School Choral Union, the music being supplied at cheap rates by the L.C.C.

William Street Science and Art and Commercial Centre (London, W.)

This school has Evening Classes. It is also under the L.C.C., and run on similar lines to the foregoing. The district being chiefly commercial, the instruction is given on these lines. Teachers' Classes are held in Art, Care of Children, etc., for teachers living near by.

The school aims to carry on the work begun in the ordinary Evening Schools of the district, and to prepare for Polytechnics and Art Schools; also for Teachers' Certificates in the Sections of Art, Science, First Aid, Home Nursing and Infant Care.

The Courses of Study are commercial and literary, students being urged to take complete courses, and those under 18 are obliged to do so.

The teachers are trained and certificated, and usually specially qualified. The Art instructors are teachers from the Council Day Schools. For special subjects such as languages, specially qualified people are chosen, not necessarily trained teachers—*e.g.*, a barrister lectures on Commercial Law, a doctor on First Aid, etc. The Shorthand teacher holds a gold medal for highest speed in Pitman's shorthand competition. The responsible master's salary is fixed; the other teachers are paid by the lesson.

The entrance requirement is a good general education, students under 16 being taken only if their previous training is adequate.

A few social gatherings, dances, etc., are held during the session.

The fee is 2s. 6d. per session, 1s. 6d. for pupils under 18.

SECTION 3: BOROUGH POLYTECHNIC INSTITUTE.

There are 3,000 students in attendance; 4,000 students and members used the building last year. The neighbourhood (Borough Road) is one of the poorest in London.

Boys must have passed the 6th standard (about 12 years of age); but half of them cannot read a passage in any standard author such as Scott, Dickens, etc., and understand it. This is because of the large classes and largely mechanical teaching. Here history and geography are taught industrially—work and wages; literature as taught means not grammatical analysis but a love of

literature—ability to grasp the story. Language is taught by the direct method—phonetics.

Principal Millis expressed the opinion that there is a good deal in the atmosphere of the school in which a boy works, and this atmosphere is governed largely by the equipment and by the style of the men under whom he works. As boys are leaving, these men, who have worked in shops and have scientific knowledge applicable to the trade, can talk in a general way and plan out the work, and use influence outside in getting boys into work. There are various ways in which a piece of metal can be worked, and a boy at once gains the sympathy of men in the shop and inspires confidence in employers and firms by the way he handles metal, and the method he shows in the work. About the age of 16 boys go into occupations by various conditions—physique, deftness for mathematical instruments, etc.

Placing Boys and Girls.

Mr. Millis stated that it was difficult to get boys into employment, due to the fact that the employers could get boys from the Elementary School. No boys were admitted to this Polytechnic unless they intended to take the full three years' course and afterwards follow some mechanical or industrial pursuit. At the end of that course a list of the boys who are leaving is sent out to various firms engaged in those trades for which the boys are trained, giving particulars of each boy's work, both theoretical and practical, with remarks as to his general character. An Advisory Committee connected with each trade acts with the object of linking up the education given in the school with the industrial activities of the neighbourhood. Of the 30 boys who left the day school in July, 1910, 16 obtained employment directly through the school influence; 2 went to Technical Colleges, and the remainder found work either through the influence of their parents or by the help of other agencies such as District Apprenticeship Committees.

In the Girls' School they have Waistcoat-making, Ladies' Tailoring, Dressmaking, Upholstering, and Laundry. Girls come at age 14 to 16; 20 hours out of the 30 are devoted to actual trade work; the other 10 hours for general education, Physical Drill, History, Drawing and Art. Girls are employed at high wages before their time is up. Girls' trades are not so highly organized, and the employers are wanting them. The aim is to give a good all-round training. Girls get an average of 8s. to 10s. and sometimes 10s. to 17s. a week.

Girls are not trained here for domestic service, but the intention is to train young women as first-class cooks. Mr. Millis believes the cure of snobbishness which leads girls into clerking and as ordinary English typists, is to be found in the trade classes.

Social Value of these Schools.

Principal Millis, who has been in educational work for 33 years, thinks that many of our social problems will be cured by having Trade Classes from which properly trained young people can be sent into every trade. He also

believes that the educational work of the Technical Institute, whether Trade or Evening School, is one of the greatest temperance organizations to be found, without saying one word about temperance. On these grounds alone they are worth all the money that is spent on them, for it is known that all the pupils will be better men and women. The workers and people connected with temperance organizations know that the changes have been enormous amongst the actual workmen; they are much more temperate. These schools get the more thoughtful people in all the trades; people see that the man who works with his hands is as "good" as the one who works with his pen. The improvement in physique has been marvellous; hence social conditions are being improved.

Aim of this Institute.

The Borough Polytechnic was founded in 1892 to provide, in the first place, sound technical instruction for young men and women engaged in various trades and industries in the district of Central South London. It must be specially noted that this instruction is designed, not to *supersede*, but to *supplement*, the training of the workshop or other place of business.

The secondary object of the Institute is to promote general knowledge by means of classes in arts and crafts, higher commercial subjects, languages, domestic economy, music, etc.

Lastly, the Institute does much to facilitate social intercourse amongst its students. Membership of the Institute carries with it certain privileges, and healthy recreation and amusement is afforded by its various Clubs and Societies.

The income of the Institute is chiefly derived from grants made by the following bodies:—London County Council, Board of Education, Central Governing Body, Governors of Herold's Foundation, Trustees of St. Mary Newington, National Association of Master Bakers and Confectioners, London Master Bakers' Protection Society, and Trustees of St. Olave and St. John, Southwark.

Day and Evening Classes.

The work of the Institute is divided into two branches: (1) Day Schools and Classes, (2) Evening Classes.

Day Schools and Classes.—Under this head are comprised—

1. Trade School for Girls to teach a skilled trade (Waistcoat-making, Ladies' Tailoring, Dressmaking, Upholstery, or Laundry work), and to continue General Education; two years course; age 14 to 16.
2. Domestic Economy School for Girls (Cookery, Needlework, Laundry-work, Housewifery, Drawing, and Physical Exercises.)
3. Technical Day School for Boys (Mechanical Drawing, Chemistry, Physics, Use of Wood and Metal-Working Tools, and English subjects).
4. The "National" School of Bakery and Confectionery.
5. Music Classes for Boys and Girls.

Evening Classes.—The following are the main Departments:—

1. Special Trade Classes (for Engineers, Metal Plate Workers, Bricklayers, Masons, Carpenters, Plumbers, Tailors, Boot and Shoe Makers, Printers, Bookbinders, Wheelwrights, Varnish and Colour Makers, Bakers and Confectioners).
2. Engineering and Building Trades Department (Practical Geometry, Machine Construction, Applied Mechanics, Heat Engines, Practical Mathematics, Building Construction, Builders' Quantities, Motor-car Designing and Construction).
3. Chemistry (Organic, Inorganic and Electro-chemistry).
4. Electrical Department (Magnetism and Electricity, Electrotechnics, Electric Lighting, Wiremen's Work, etc.).
5. Other Science Classes (Mathematics, Physiology and Hygiene.)
6. Arts and Crafts (Modelling, Design, etc.).
7. Women's Technical and Domestic Economy Classes (Millinery, Dressmaking, Embroidery, Cookery, Needlework, Sick Nursing, etc.).
8. Higher Commercial and General Classes (Languages, Commercial Law, Economics, Banking and Currency, Machinery of Business, Accountancy, etc.).
9. Music and Elocution Classes (Pianoforte, Violin, Singing, Elocution).
10. Special Trade Classes. These are intended only for those actually working at the respective trades, and other students are not admitted.

Students are required to attend the theoretical as well as the practical classes.

In certain Trade Classes (Engineering, Brass-finishing, Pattern-making, etc.) where practical instruction only is given, students are required to attend a Drawing or Mathematics class, to which they are admitted at a reduced fee. No student is admitted to the practical class who does not fulfil this condition.

Students joining Trade Classes are admitted to any of the Science and Art classes at half-fees.

Apprentices and others under 21 years of age are admitted to any particular Trade Class at half fees on production of a letter from their employer or foreman stating that they are actually working at that trade.

This is only one of many Polytechnic Institutes in London, and only the main features of this one are stated here. The announcements of the Courses of Study of these Institutes run to hundreds of pages, and are worthy of study in detail by principals and teachers of Technical Schools and Institutes in Canada.

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SECTION 4: THE NATIONAL SCHOOL OF BAKERY AND CONFECTIONERY.

As an example of a "Specialized School" for a particular trade the following full statement is given of the above named school:—

NAME AND AIM.

The National School of Bakery and Confectionery at the Borough Polytechnic Institute, was established to promote industrial skill in the Bakery trade, and by sound instruction in the scientific principles underlying the trade to raise the status and skill of the worker.

HISTORY.

The School came of small beginnings. A class in bread-making for evening students was started at the Institute in 1904 in a part of the Cookery School fitted up with necessary portable oven and other fittings. The class was inaugurated at a public meeting of the trade, and the first course had an average attendance of 66 students, nothwithstanding that it was carried on under great difficulties by reason of the absence of proper accommodation for practical work. The Instructor of the class, Mr. John Blandy, was a well-known master baker who had worked hard and enthusiastically for years in the cause of Technical education for the bakery trade. The one class quickly grew to five classes and the work proved so successful that a special bakery was built in 1898, the cost of the equipment, over £700, being defrayed by a grant from the Technical Education Board of the London County Council. To mark its opening as a special department of the Institute, an influential meeting of over 200 master bakers and others connected with the trade was held. The report of the meeting in the Trade Press attracted a good deal of attention, and the National Association of Master Bakers and Confectioners showed their interest in the work by offering to co-operate with the Governors of the Borough Polytechnic in providing Technical Instruction for those engaged in the trade. As a result of this co-operation the "National" School of Bakery and Confectionery was founded in 1899 with day and evening departments.

FINANCE.

The National Association of Master Bakers and Confectioners contributes up to £500 a year, as required, towards the upkeep of the School; the London Master Bakers' Protection Society has for some years made an annual grant of £50 to the School, and leading firms in the allied trades make gifts in kind to the value of about £200 a year. For the year ending July, 1909, the

cost of the School, exclusive of establishment charges, heating, &c., was £1,4 6. The revenue account is as follows:—

Income.

	£ s. d.	£ s. d.
Grants:—		
National Association	300 0 0	
London Master Bakers	50 0 0	
Gifts and Materials	242 6 6	
Governors of the Borough Polytechnic (exclusive of Lighting, Heating, &c.)	60 0 0	
		652 6 6
Fees		402 0 0
Sales, &c		286 5 9
London County Council and Van Marken Scholarships		71 9 8
Sundries		6 4 0
		£ 1,418 5 11

Expenditure.

	£ s. d.
Salaries and Wages	576 7 6
Class, Materials, Printing, Advertising, &c	754 7 6
Special Equipment and Alterations	135 10 9
	£ 1,486 5 9

BUILDINGS.

The special bakery built in 1898 was used for both bread-making and Confectionery, and this was very inconvenient, especially when the number of students began to increase, and in 1902 a further extension was built at a cost of about £3,000 towards which the London County Council made a grant of £1,750, and the National Association of Master Bakers and Confectioners gave £250 and made itself responsible for the equipment of the whole of the new building. This extension gave a new bakery which could be devoted entirely to bread-making, and the existing room was reserved specially for the confectionery side, provision was also made for a lecture room and store room. Under these satisfactory conditions the work continued to flourish and the question of further accommodation became necessary. In 1908 by means of a gift of over £5,000 from Mr. Edric Bayley, and a grant from the London County Council, the Governors were able to make valuable extensions to the buildings, which included the remodelling of the Bakery School accommodation by the erection of a large lecture room and laboratory, and by increasing the accommodation of the bakery and confectionery rooms, the National Association providing the additional equipment. The accommodation possessed by the School is two large rooms for confectionery, one large room for bread-making and an extensive lecture room and laboratory; in addition the students use the classrooms and art rooms of the Polytechnic for their special instruction in Drawing and Modelling. The equipment of the bakery consists of a large draw-plate oven, and a Peel oven in the bread-making room; and in the confectionery a large double decker oven and an extensive collection of all the modern machinery for bread-making and confectionery. There is accommodation and the usual equipment for more than 50 students at one time both in the laboratory and in the bakehouse.

CURRICULUM AND TIME TABLE.

The full time Day Courses extend over two years and the number of individual Day Students attending for the last three Sessions are as follows:—1908, 54; 1909, 45; 1910, 51.

The instruction which all students must follow, includes Bread-making, Confectionery, Drawing and Modelling, Chemistry and Physics. The Session covers a period of about nine months, and the School is open for 33 hours per week. The fee for the Session is £7 7s.

TIME TABLE.

Elementary.

	9—10.	10—12.30.	2.0—4.0.
Monday		Icing and Piping	Confectionery.
Tuesday	Lecture on Confectionery	Bread	Bread.
Wednesday	Drawing and Modelling	Confectionery	Icing and Piping.
Thursday	Chemistry	Physics	Small Breads.
Friday	Drawing and Modelling	Bread	Bread.
Saturday	Confectionery	Confectionery	

Advanced.

	9—10.	10—12.30.	2.0—4.0.
Monday		Rolls, &c	Rolls, &c.
Tuesday	Drawing and Modelling	Confectionery	Confectionery.
Wednesday	Applied Chemistry	Bread	Bread.
Thursday	Drawing and Modelling	Icing and Piping	Confectionery.
Friday	Confectionery	Marzipan Work	Confectionery.
Saturday	Bread	Bread	

From the time table it would appear that very little attention is paid to the scientific side of bread-making, but this is not so, for whilst waiting for the fermentation processes during the time shown for bread-making the necessary Chemistry and Physics required for the technical course and a number of laboratory experiments are carried on: special laboratory note books have been drawn up for this purpose.

Evening Classes in bread-making and confectionery are held at the School, but are not dealt with in this Report. The number of individual students attending the Evening Classes for the past three Sessions is as follows:—

	1908	1909	1910
Evening Students	143	121	206

STAFF AND COMMITTEE.

The School is managed by a Committee appointed by the National Association of Master Bakers and Confectioners, the Chairman and Principal of the Polytechnic being *ex officio* members. The Committee superintends the working arrangements of the School and advises the Governors on all important matters connected with the management and equipment of the School, and the appoint-

ment of teachers. The School is staffed by an expert confectioner of wide experience and by an expert in bread-making possessing not only considerable trade experience but a good knowledge of the scientific side of the trade; the services of the Art Master of the Polytechnic are obtained for the Drawing and Modelling.

RESULTS OF TRAINING.

The School being under direct trade management, its work is always kept on trade lines. The students who are mostly master-bakers' sons are able to apply the knowledge they gain in the School in their fathers' businesses, and the few who do require situations have no difficulty in obtaining them.

OPINIONS OF EMPLOYERS.

That the work of the School is appreciated is shown by the fact that its fame has spread to all parts of the world, and a few students have come from Canada, New Zealand, South Africa, and Holland, to attend the classes. The large number of day students is maintained year after year, and demands for lectures from the teachers of the School are frequently received from the provinces. The annual grants from the National Association of Master Bakers and Confectioners and the London Master Bakers' Protection Society may be taken as very conclusive evidence that the work is being carried on to the satisfaction of the trade.

SECTION 5: THE SCHOOL OF BUILDING (BRIXTON).

This school is one of the Monotechnics. It was opened in 1908. The following statement as presented by Mr. R. Blair, Chief Education Officer of London, to the Imperial Education Conference is fuller and better than the notes of the Commission.

(1) The prospectus states that "a Day School for boys has been established at this Institution, with the object of providing a sound scientific and technical training for boys preparing to enter the Building Trades and allied vocations."

Although it has not been suggested that this training should in all cases replace apprenticeship, the instruction given is that which modern conditions render almost impossible save at such an Institution as this. In the case of boys whose parents are able to maintain and pay a premium for them, apprenticeship for a reduced period may follow at the termination of the three years' course. On the other hand, boys of poorer parents entering the trades or becoming draughtsmen, clerks in builders' and surveyors' offices, etc., are at the completion of their course in a position to commence work as apprentices or learners with much more advantage both to themselves and their employers than boys securing such appointments immediately upon leaving the ordinary schools. The whole of the training is preliminary, and should be continued at Evening Classes in the Council's institutes or polytechnics.

(2) The course is for three years, and admission to the School is restricted to boys between 13 and 15 years of age on the 31st July of the year in which they enter the school and who have passed the sixth standard of an Elementary School or its equivalent.

The curriculum, which is common to all students during the first year, and which is looked upon as a probationary period, includes Building Construction, Workshop Practice, Study of Materials, Workshop Arithmetic and Mathematics, Experimental Science, Geometrical and Plan Drawing and Lettering, Freehand Drawing of Building Details, English Literature, History, with special reference to industrial changes and the development of public and domestic architecture, Geography, with special reference to building materials, English Composition, and Business Correspondence. Briefly this is—

8 hours per week Workshop Practice (General);
6 " " Technical and Drawing Office instruction;
10 " " English, Mathematics, and Art applied to building;
4 " " Elementary Science;
2 " " Physical Instruction.

At the end of the first year the Principal advises the parents of the boys attending the School as to the most suitable vocation or craft to select for their sons; this recommendation is based upon any special aptitude shown during the first year; reports from the masters; the character of the boy; and the position of the parents.

In the second and third years the courses are divided into two main sections: (*a*) the Artisan Course for Bricklayers, Carpenters, Masons, Plumbers, Painters, etc.; (*b*) the Higher Course for Architects, Builders, and Surveyors. During these two years the instruction in Building Construction for all students is of a more advanced character, and the general Elementary Science with reference to building materials and Mechanics of Building is more directly applied. Pupils taking the Artisan Course specialise in the trade which they intend to follow. The pupils in the Higher Course receive weekly instruction in the various trades in rotation, and Builders' Quantities, Architectural Drawing, and Land Surveying are added to the curriculum.

In the second year—

10 hours per week are devoted to the specialised instruction.
6 " " to Technical and Drawing Office work;
4 " " " Elementary Science;
8 " " " English, Mathematics and Art applied to building;
2 " " " Physical Instruction.

In the third year—

15 hours per week are devoted to the specialized instruction;
5 " " to Technical and Drawing Office work;
4 " " " Science;
4 " " " English, Mathematics and Art applied to building;
2 " " " Physical Instruction.

(3) Towards the end of the third year, as opportunities arise, the most suitable are placed. Up to the present this has been done particularly satisfactorily direct from the School. The Principal is of opinion that it is undesirable to insist on the completion of the full term of three years, as it would be extremely difficult to place, or assist in placing, say groups of 50 boys leaving simultaneously.

The nature of the School draws students from all over London, and in order to meet the needs of the boys there has been provided a cheap plain midday meal, consisting of hot meat, two vegetables and pudding for which 4d. is charged per boy, and in the case of cold meat, vegetables and pudding, $3\frac{1}{2}$d. per boy.

The workshop instruction is of such a nature as to render frequent bathing a necessity. A range of six shower baths forms part of the school equipment: the great demand for their use is an instance of their necessity, and speaks for their popularity. Personal hygiene is regarded as part of the training towards good citizenship. It is hoped that this love of cleanliness, and generally a high ideal of self-respect, may be continued in after life.

As a protection to clothing, the wearing of white overalls is insisted upon in all workshops.

Finally, wherever the instruction permits, such as in the workshops, drawing offices, etc., the conditions and type of work as nearly as possible approach those obtaining in builders' shops, architects' and surveyors' offices, etc. The instructors for this part of the work are drawn from the ranks of first-class craftsmen who have had broad experience in shops, offices, etc., and who, therefore, are in a position to appreciate the condition prevailing in the commercial work.

SESSIONAL PAPER No. 191d

CHAPTER VI: TWO IMPERIAL INSTITUTIONS.

SECTION 1: IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY, LONDON.

Information obtained in "Conversation" with Sir Albert Keogh, *Rector*, Sir Edward Thorpe, *Professors* Perry, Callendar, Robertson, Farmer *and* MacBride, *at the Imperial College of Science and Technology, London.*

The Imperial College of Science and Technology consists of three institutions—the old Royal College of Science, the Royal School of Mines, and the City and Guilds Engineering College, formerly known as the Central Technical College. These three instituions were, in a sense, independent of one another. The Royal Colleges of Science and Mines were for many years run by the Education Department, the former having been begun as part of the old Science and Art Department. Four years ago a general feeling existed that these institutions—certainly two of them—were ceasing to fill the objects for which they were founded; that they did not progress with the general spirit of the country, inasmuch as, while they were on rather old lines, the new Provincial institutions and other schools had arisen and had met with a great measure of success. Accordingly a Committee of eminent men engaged in education—some of them the best known names in England—was convened by the Minister of Education, and brought in a report, the general meaning of which was that the relation between Science and the industries in Great Britain had never been very well established; that, as a consequence, industries were falling behind, having lost a great deal of way which they formerly had—the great object-lesson being Germany; and that this Imperial College ought to be founded.

An Imperial Idea.

The Imperial part of the idea was to have a College that would provide for the higher scientific objects of the whole Empire. It is a very ambitious project, and if ever realized, must take many years. It was thought that this College should be the centre about which all the great scientific and technical interests of the Empire would revolve. Though some people might consider this a very pious idea which could never be realized, Sir Albert Keogh thought it could, and indications within the past year showed that if the country is alive to its importance, the project can be fulfilled.

The idea was to have a central institution on the very highest scientific plane, to which the rest of the Empire would look, and to which the other institutions of the Empire would send students for special study of particular branches.

The other idea, which was perhaps the more businesslike and satisfactory, was that of binding these three colleges under one governing body and providing

the highest scientific training in the country in relation to industries. The feeling of the Committee, though not perhaps expressed in the Departmental Report, was that the industries of Britain were behind, not because of lack of men and organization, but because it was impossible to get the highest scientific education directed especially towards the requirements of the country's industries. On one hand the universities were training for degrees, and on the other the industries did not want college-bred men. The syllabuses were laid out by persons who had, perhaps, no knowledge of or connection with the industries, and statements were made that the people turned out were utterly useless to the manufacturers. As a broad general principle, industrial people rather fought shy of college-trained men. Sir Albert Keogh thought that this objection applied with less force to the South Kensington institutions than to any others in the country.

The College of Science was originally started mainly for teacher training, but the effect of the Departmental Committee Report was to turn it towards scientific training of individuals who were to become masters of industry.

Buildings and Schools.

The Royal College of Science consists of two buildings, one comprising accommodation and equipment for Mechanics, Mathematics, both branches of Biology, and some Metallurgy; the other providing for Chemistry and Physics.

The Engineering School of the Imperial College is the City and Guilds College, in Exhibition Road. The institution is remarkable in that it is the only one in the country to which entrance is competitive. The College is always full, and the number of applicants for admission is in excess of the number of vacancies. The entrance is by examination, which in character is rising in standard. It is probably one of the most successful engineering schools in the country.

The School of Mines, as a consequence of several very considerable donations from people interested in mining and metallurgy, has been partly reorganized and its courses of study improved quite equal to anything done elsewhere. Buildings are now being erected quite worthy of the important object. There has also been considerable increase in the size of the building, this work being under contract. In connection with the School of Mines and the Engineering School the amount being spent is £260,000.

Those are the three institutions of which the Imperial College consists, and the ideal is that the standard of admission into the College be gradually raised, so that only the very highest work will be done within its walls. It is hoped that in fulness of time graduates will come; that the Dominion of Canada will send its graduates to it instead of to Continental Europe for their higher studies. The College is to be developed in accordance with the requirements of Australia, Canada and other parts of the Empire.

Admission and Training of Students.

These institutions now receive boys not younger than 17, who have had a good Secondary Education, and excuse them from the first, second, or third year course in accordance with the standard they may have attained when they present themselves, their fitness to be excused from the early subjects being decided by the professor concerned. Diplomas are given in Mechanics and

Mathematics, Chemistry and Physics and other sciences, Mining and Metallurgy, and both branches of Biology. The special feature of the institution is that the training is given to the student by the professor in such a manner as the latter thinks best adapted to make this boy of use to the industry. That is where it clashes with the University system. It is an open secret that this College does not quite see eye to eye, for instance, with the University of London; and many have feared that if the College were incorporated by the University, as some propose, the whole of this feature would be destroyed; because mining and mineralogical students would have to be trained in accordance with the syllabus laid down by the University of London instead of that laid down by the industrial people of the country.

The new system of training in the Mining School was established, not by University professors, but by people actually engaged in the mining industry; and a Board of Mining and Metallurgy is now being set up to advise from time to time as to the courses of the Imperial College and also, when they think proper, to examine the system of education in the College to ascertain whether in all its details it is such as will turn students into what the profession of mining requires. This is considered a very essential feature in this institution, and it is hoped that it will run through every branch of training in the College. That is marking a very considerable advance from the old system of learning science, under which teachers in training had to go through a very large number of subjects, perhaps not very definitely connected with one another, and had to go out to classes all day to learn certain things to teach to ohert people.

Technology and Research.

The Imperial College is a great technological college whose object is to give men technical professions; that is the object of the institution, and although it is a very slow process to break away from tradition in England, it is hoped that in the long run this end will be attained.

In addition to the educational training of youth mentioned, there are post-graduate courses, so-called because one thus best understands what is meant. Of course the College trains people who are not graduates. What it cares to know is whether, when they come to the most advanced courses, their training has been sufficient to enable them to profit by them. In that direction the Imperial College must develop primarily if it is ever to be really Imperial. It is hoped that its desire and power to serve will be recognized by other institutions both at home and abroad. The authorities are endeavoring to get as near as possible to the ideal position of a higher institution for research work, etc. Of course it will take a long time to attain the things sought.

Shop Training *vs.* Formal Studies.

In answer to a question as to whether there is an equivalent in mental discipline for developing powers of perception and clear thinking and good managing in the training obtained in shops compared with formal studies in classrooms, Sir Edward Thorpe said much depended on the individual, but his own impression was that a young man who has been at a good school is very much more plastic material; he knows how to learn in a much better way than the man who has

been going only to night classes and has scratched along as best he can. Of course there were many exceptions, and there was good in both.

Prof. Perry told how excellent the workshop boys were in Physics, which was his subject. He said the training of those men had been mechanical, and the difference in their favor was something enormous; but a full comparison cannot be made, because the College does not get those who come in from Secondary Schools who have also trade qualifications.

In reply to a question as to how the Imperial College expected to reach its high aim, although admitting so many young men who have not had even what may be called Junior Matriculation standing; Prof. Perry asked, "But is it necessary that a man should have these qualifications? If you are to have a general qualification, the university qualification is a good one; but surely you are not going to keep men out of the high posts in industries because they are not able to take a little Latin? We usually assume that if a man knows a little Latin, he has been to a good school; that is all; but you can have a bright man without even his knowing French. Of course he would not live long in Montreal or Quebec without knowing French, but we are pretty certain about this—that a man can become a very good engineer without being able to pass the University examination in Latin; in fact, some of us think such training as it implies is a disqualification."

Professor Farmer (Botany) said that his experience did not accord with Prof. Perry's. He thought these students who had a good general education did a great deal better, both with him and in after life, than those who had not. The kind of subjects which his students had to know were rather more multifarious than those required in engineering, and one important fact was that the conditions under which they work render it necessary for them to have access to the work of other nations; hence languages became more or less essential to them. Prof. Perry added, "The only sort of bar to a man's following any course of instruction is the bar of not understanding what the professor himself might say. If I find a man who has not enough previous knowledge to understand what I am going to talk to my students about, and use in my laboratories, he should not attend my course."

The Imperial College, in the three institutions, was attended by about 800 students.

SECTION 2: THE UNIVERSITY OF LONDON.

In this Section the Commission confines itself to a brief statement of some of the points of information, likely to be useful for Canada, as obtained in 'Conversation' with Dr. Henry Alexander Miers, Principal of the University, and other gentlemen who kindly received the Commission.

The affairs of the University, in respect to the working of the present organization, are in a state of flux. A Royal Commission on University Education in London, which had the matter under inquiry and consideration during nearly three years, has presented its final Report. If the Report is acted upon in full, the University will have eight Faculties, viz.—Arts, Science, Technology, Economics, Medicine, Laws, Theology and Music; and the very wide and varied educational service by the University will be continued and extended.

The teaching in Engineering, Mining and Metallurgy for the University goes on in many institutions. Most of the Engineering and Mining teaching in London of the higher sort, for instance, goes on at the Inperial College of Science and Technology. That is recognized as a school of the University; or in other words there are teachers on the staff of the College who are recognized by the University as University teachers, and whose students can therefore enter for the examinations for University degrees. The Academic Council of the University approves of courses of instruction given in the 31 Colleges and Schools of the University, otherwise the students at such Schools could not enter as internal students of the University.

In London the situation is complicated by the extraordinary degree system. Any student entered may pass the matriculation and the degree examinations without any attendance, except in the faculty of Medicine. It is still open for a student at any institution in London, or anywhere in the world, to enter himself as an external student and take the degree, no matter who may have been his teacher or teachers. The number of external students is increasing.

The University provides for the teaching and training of internal students over an area within a radius of thirty miles. There are always a number of students from the Polytechnics, at which there are teachers who are recognized by the University.

In the case of a Polytechnic where there is an advisory body composed of the manufacturers of the locality, if and when they approve of or desire a certain course, they are represented on the University Council that supervises the course at that particular institution. The Boards, which draw up the studies at the institutions, are often composed to a large extent of gentlemen other than teachers, so that the industries are very fully represented in the drawing up the syllabi for examinations.

The students do not require University matriculation for all the courses in the Polytechnics, as it has been found that a student has great difficulty in going back and getting up matriculation subjects. At the same time, the number of the City and Guilds students who qualify to take the University degree increases year after year; and the percentage of the students who take the University degree increases yearly.

Engineering is taught on a large scale not only at the Polytechnics but in University College and King's College.

Domestic Science subjects, by themselves, do not lead to a University degree or diploma.

The various institutions, Polytechnics and Colleges, have been gradually developing themselves, and only ten years ago an effort was made to coordinate these through the instrumentality of recognizing teachers and courses of study at all similar institutions. A Commission is now considering that organization.

The institutions in connection with the University for the training of teachers are: The London Day Training College, The Goldsmith's Institution, The University College, King's College, King's College for Women, The institution in the south of London for Anthropology, and about 13 institutions which are

called Schools of the University, where there is teaching for the degree of the University.

The examination papers for these institutions are set by examiners appointed by the Senate. The mode of appointing examiners is this. On the report of the Board of Studies two, or sometimes four, examiners are appointed for each study. These are for external students who are trying for a degree. There are other examiners for internal students, about seven or eight recognized teachers being appointed in addition to the four external examiners. Two examiners, generally one internal and one external, are told off to set each paper. When they have set the papers, they are submitted to the whole Board of the 11 or 12 Examiners for discussion and consideration and, after being approved they are printed and sent to the candidates. In the Faculties of Arts, Science, Mechanics and Engineering the internal and external examinations are separate. The only ones in which they are identical are Medicine, Law, Theology and Music. The University is bound by statute to try and make the standards of the two examinations the same.

The question of men who have had shop practice and who wish to go to a University to prepare for teaching industrial and technical classes has not come before the University Authorities as yet. The question is one of very considerable practical difficulty, because the kind of people that would be useful as teachers are the skilled persons who are snapped up by the employers. They are so valuable that the employers prefer them; therefore the demand on the part of the colleges for competent teachers, who have shop experience and teaching ability, is one which it is exceedingly difficult to supply.

The Board of Education has a system of national scholarships intended to meet this difficulty in England. It has been a means of bringing a very large number of men straight from the works to schools and colleges which have given them academic training.

The demand in Canada for this class of teachers is likely to be very much larger than the demand in England, where University Extension work to train foremen and other men, who already know the craft, into teaching ability and to make them competent for evening schools through literary assistance and training in the art of teaching as such, is being rapidly developed.

In connection with the London University alone there are 15 classes, each attended by about 30 working people who band themselves together to attend a certain course, and attend regularly during the session. Their desire is not to be transferred from their present work, but to get more knowledge, not particularly for teaching, for the sake of the intellectual and social benefits of University training. These people could be utilized as teachers for evening schools. The great difficulty in getting teachers who know the trade and shop conditions, and who also have enough general intellectual culture and ability to be good teachers, arises from the fact that such practical men often have not the faculty of expressing themselves. A common complaint is that boys learn so much at school that they do not learn to use their own language in writing and speaking. No teacher can be a successful teacher without knowing how to use his language.

CHAPTER VII: MANCHESTER.

SECTION 1: INTRODUCTORY.

The Municipal School of Technology represents the highest form of technical education offered in Manchester. It has day and evening departments, the total number of individual students amounting to 5,299, of whom about 300 attend the full-week day classes. In the evening department, group courses of study are arranged as follows:—General 1st year courses: Mechanical Engineering, Electrical Engineering, Plumbing, Sanitary Inspection, Municipal Engineering, Building Trades, Cotton Spinning and Cotton Weaving. These are attended by 477 students in all.

The Municipal School of Art also has day and evening classes.

Evening Classes the Feature.

There are Evening Schools conducted by the Education Committee in addition to those mentioned above, these being divided into three groups, viz. Grade I, Evening Continuation Schools and Lads' and Girls' Clubs; Grade II, Branch Technical Schools, Branch Commercial Schools and Evening Schools of Domestic Economy; Grade III, Municipal Evening School of Commerce, Central Evening School of Domestic Economy, and Teachers' and Special Classes.

The number of evening students in all the evening classes, both those of the Schools of Technology and Art and those under the Education Committee, was 22,362, or 3.9% of the population.

The courses in the Evening Continuation Schools cover 2 years, and comprise technical, commercial and domestic subjects.

There are 6-year courses for technical students, the first 2 years being taken in an Evening Continuation School, the next 2 years in a Branch Technical School, and the last 2 in the Municipal School of Technology.

The 6-year commercial course is similarly arranged, the first two years being taken in the Evening Continuation School, the next 2 in the Branch Commercial School, or in the Municipal Evening School of Commerce, and the last 2 years at the latter institution.

It is a noteworthy fact that employers co-operate with the education authorities, allowing their employees to attend classes, and granting them facilities to do so. Some firms pay the fees for their employees, others refund them, and in some cases raise wages for successful studies at the evening school. The education authorities are prepared to furnish reports to employers on the progress of their employees.

Day Classes Also.

The Municipal School of Technology has special day classes for engineering apprentices. These boys are selected by their employers and give one full day of 8 hours a week. They are found to make more progress in this way than at evening classes.

There is also a day class for apprentice painters and decorators, as well as one for apprentice plumbers.

Training for Girls.

Girls attending elementary schools receive special training in Domestic Economy at Housewifery Centres, which are equipped and furnished as workmen's cottages, at which the teachers reside. The course covers 7 to 8 weeks, and is attended by girls who are about to leave school. The instruction comprises Housewifery, Cooking and Laundry, and lectures are also given on the care of infants and young children. There are 45 centres for Cookery, 9 for Laundry, and 3 for Housewifery, and 9,949 girls attended in 1908-9. There is a special 3 months course at the Granby Row Centre, at which girls reside in turns.

The School of Domestic Economy offers a Housewives' Course of 6 months, on the conclusion of which a diploma is awarded. Girls from the Housewifery Centres can obtain scholarships to attend this school.

At the Evening School of Domestic Economy, a Housewives' Diploma is awarded on the completion of a 2-year course.

A Summer session is also held in connection with the foregoing.

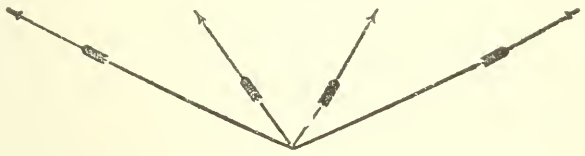
SESSIONAL PAPER No. 191d

DIAGRAM A

ILLUSTRATING THE GRADED SYSTEM OF COURSES OF INSTRUCTION ADAPTED TO THE REQUIREMENTS OF THE DIFFERENT CLASSES OF STUDENTS IN THE MANCHESTER EVENING SCHOOLS. *(Read up.)*

GRADE III.—CENTRAL INSTITUTIONS.

MUNICIPAL SCHOOL OF TECHNOLOGY.	MUNICIPAL SCHOOL OF COMMERCE AND LANGUAGES.	MUNICIPAL SCHOOL OF ART.	MUNICIPAL SCHOOL OF DOMESTIC ECONOMY AND COOKERY.
Advanced instruction in Science and Technology.	Advanced instruction in Commercial Subjects and in Languages.	Advanced instruction in Art and Design.	Advanced instruction in Domestic Subjects. [Day classes only.]



GRADE II.—BRANCH TECHNICAL SCHOOLS, BRANCH COMMERCIAL SCHOOLS, BRANCH ART CLASSES, AND EVENING SCHOOLS OF DOMESTIC ECONOMY.

Second, Third, and Fourth Year Technical Courses, to meet the requirements of all classes of Technical Students.	**Second, Third, and Fourth Year Commercial Courses,** to meet the requirements of Juniors in business houses.	**First and Second Year Art Courses** leading up to the instruction at the Municipal School of Art.	**Specialized Instruction in Domestic Subjects,** for Women and Girls over 16 years of age.

GRADE I.—EVENING CONTINUATION SCHOOLS.

First and Second Year Technical Courses, for Boys engaged in manual occupations.	**First and Second Year Commercial Courses,** for Boys and Girls engaged in commercial or distributive occupations.	**First and Second Year Domestic Courses,** for Girls desirous of receiving a training in domestic subjects.

PREPARATORY COURSE.

For Boys and Girls who desire to improve their general education or who are not sufficiently prepared to take advantage of the above Courses.

DIAGRAM

Showing Courses of Instruction extending over Six Years for Technical Students in the Manchester Evening Schools. *(Read up.)*

Advanced instruction in Science and Technology, in the Municipal School of Technology.

FIFTH AND SIXTH YEAR TECHNICAL COURSES.

TAKEN IN BRANCH TECHNICAL SCHOOLS.

Engineering Course.	Building Trades Course.	Chemical Industries Course.	Electrical Course.
Machine Construction hrs. 2	Building Construction hrs. 2	Chemistry (Theoretical and Practical) hrs. 5	Magnetism and Electricity (Theoretical & Practical) hrs. 2½
Applied Mechanics (Theoretical and Practical) 2½	Applied Mechanics (Theoretical and Practical) 2½	Physics (Theoretical and Practical) 2½	Mathematics and Geometry 2
Mathematics 1	Mathematics 1		Machine Construction 2
Geometry 1	Geometry 1		
6½	6½	7½	6½

FOURTH YEAR TECHNICAL COURSES.

Engineering Course.	Building Trades Course.	Chemical Industries Course.	Electrical Course.
Machine Construction hrs. 2	Building Construction hrs. 2	Chemistry (Theoretical and Practical) hrs. 2½	Magnetism and Electricity (Theoretical & Practical) hrs. 2½
Applied Mechanics (Theoretical and Practical) 2½	Applied Mechanics (Theoretical and Practical) 2½	Physics (Theor. & Prac.) 2½	Applied Mechanics (Theor. & Prac.) 2½
Experimental Mathematics 2	Experimental Mathematics 2	Experimental Mathematics 2	Experimental Mathematics 2
6½	6½	7	7

THIRD YEAR TECHNICAL COURSES.

Practical Mathematics and Practical Drawing	3	hours weekly.
Practical Mechanics and Physics	2	" "
English	1	" "
	6	" "

SECOND YEAR TECHNICAL COURSE.

Practical Mathematics and Practical Drawing	3	hours weekly.
*Woodwork	2	" "
English	1	" "
	6	" "

FIRST YEAR TECHNICAL COURSE.

TAKEN IN EVENING CONTINUATION SCHOOLS.

SESSIONAL PAPER No. 191d

SECTION: 2: THE MUNICIPAL SCHOOL OF TECHNOLOGY, MANCHESTER.

The object of this School is to provide instruction and training in the principles of science in their application to the industrial arts, with a view to a right understanding of the foundations upon which these arts rest, and to promote their effective development. The circular of the School states:—

The successful career of a student depends essentially upon his previous general education, for unless this has been thorough and liberal no satsifactory progress can be attained in any of the departments of the School.

The power of clear linguistic expression, and the mastery of the elements of mathematics, physics, and descriptive geometry are vital as a means of successfu l study of the applied Sciences. The chief aim of all preparatory study should, therefore, be the effective training of the thinking and observing faculties.

It is impossible for a student to obtain full benefit from the courses of instruction unless there has been adequate previous preparation.

Mere interest in experiment, or in machinery in motion, or even evidence of manual skill and dexterity, without a firm grasp of the above named fundamental subjects is of small avail if the purpose of the student be to attack serious problems in engineering, physics, or chemistry, and to fit himself for a position of industrial responsibility.

The courses of instruction of the School are directed more especially to the requirements of the industries of South-East Lancashire, of which Manchester is the commercial centre.

The School accomplishes its purpose by means of lectures, laboratory and shop-work exercises, together with scientific research directed to the solution of industrial problems.

The essential aim of the instruction is the training of faculty through a systematic course of sound theoretical study, and the development of resourcefulness and habits of self-reliance by means of an exact, thorough, and progressive course of laboratory and shop work, so as to prepare the student after due experience for positions of responsibility.

Students are required to pass an entrance examination in subjects of general knowledge, or to produce satisfactory evidence to the principal of their attainments.

The courses of instruction in the respective departments also prepare for the degree of Bachelor or Master of Technical Science (B.Sc. Tech., or M.Sc. Tech.) of the Victoria University of Manchester and for the certificate of the University. Students proceeding to the degree must have first passed the examination for matriculation of the Joint Board of the Northern Universities, or such other examinations as are approved by the Board.

Special courses of fourth year post graduate study and research are offered.

In addition to the regular courses there are special day courses for selected apprentices in the employ of engineering, plumbing and house painting and decorating firms and for library assistants.

Evening Students.

The School of Technology offers to evening students systematic courses of technical instruction and training in all the chief, and in many of the minor, industries of the city and district. Such students must be not less than sixteen years of age at entrance and have such previous preparation as will enable them to enter profitably upon the course of study they elect to pursue.

The Education Committee have provided in all parts of the city at convenient centres, suitable preparatory courses of instruction leading up to the

more advanced and specialized courses of the evening classes and of the School of Technology and of the School of Art.

Similar provision is also made, in Evening Continuation Schools and in Branch Intermediate Schools, for evening students beyond school age, for courses which include subjects of general knowledge, science, art, technology and commerce as well as domestic subjects for girls and women.

Classes for teachers in the subjects of Manual Training, Kindergarten Training and for certificate and scholarship courses are also provided. Provision is made for persons desirous of proceeding to the external degree examinations of the University of London.

In the Central Evening School of Commerce complete courses of instruction are offered of an advanced character in subjects bearing upon commercial and professional pursuits for which the courses, provided in the Intermediate and Continuation schools above named, are intended as preparation in cases where the general education is deficient.

Origin of the Municipal School.

The Municipal School of Technology is the direct outcome of the Mechanics' Institution. This form of educational effort was for nearly 80 years of the nineteenth century, in the main, the only means whereby the working and, in large part, the middle classes found the opportunity of continuing their education or of making up the serious deficiencies which resulted from the inadequate provision of day school education that characterised the years preceding the great educational enactment of 1870.

After committees of enquiry had visited the Continent of Europe and individuals had visited the United States, the erection of the new school was begun in 1895.

On October 15th, 1902, the new building was opened in the presence of a distinguished audience by the Prime Minister, The Rt. Hon. Arthur James Balfour, M.P. In the course of his address he referred to the School in the following terms: "This building is perhaps the greatest fruit of its kind, the greatest fruit of this kind of municipal enterprise in this country. . . . . Nobody can go over this building, observe its equipment, study even in the most cursory manner the care which has been devoted to it, without feeling that the Corporation of this great city have set a great example worthy of the place they hold in Lancashire, worthy of the place they hold in Great Britain."

Technological Day Courses.

The school offers to-day students who have reached their 16th year the following courses, each of 3 years' duration:—

1.—Mathematical Courses.
2.—First Year General Course.
3.—Mechanical Engineering.
4.—Physics and Electrical Engineering.
5.—Municipal and Sanitary Engineering.

6.—Applied Chemistry.
(*a*) General Technological Chemistry.
(*b*) Chemistry of Textiles (Bleaching, Dyeing, and Printing).
(*c*) Manufacture of Paper.
(*d*) Metallurgy and Assaying.
(*e*) Brewing.
(*f*) Electro-Chemistry.
(*g*) Photography.
7.—Textile Manufacture.
8.—Photography and the Printing Crafts.
9.—Advanced Studies in Technological Subjects.
10.—Engineers' Apprentices' Course.
11.—Plumbers' Apprentices' Course.
12.—Painters' and Decorators' Apprentices' Course
13.—Architectural Courses.
14.—Library Assistants' Course.

The courses in Cotton Manufacture and for Engineers' and Plumbers' Apprentices are here given as representative of the others, and as useful for consideration in Canada.

Cotton Manufacture.

Courses of Instruction—These are designed to give a sound training in the theory and practice of Spinning and Weaving to those who are or intend to be engaged in the spinning of yarns, the design and manufacture of woven fabrics, the buying and selling of yarns and textiles, or the manufacture or export of textile machinery.

The scheme of theoretical, practical, and experimental study extends over 3 years, and includes the technology of fibres; the principles and processes of spinning and weaving as applied to cotton, silk, and mixed fabrics; the analysis, testing, and costing of yarns and fabrics; freehand drawing and applied design; geometrical and machine drawing; mathematics, mechanics, physics, and mechanical and electrical engineering; construction of works, and factory law; and chemistry in its application to the treatment of textile fibres, and to the materials used in sizing and other textile processes.

Whilst the courses are specially intended for those who can give all their time, facilities are also offered to persons employed in the textile industry whose employers are willing to give them the opportunity of attending such lecture, laboratory, and workshop courses as may be arranged after consultation with the head of the department.

Times, in addition to and other than those set forth in accompanying time table, are arranged in the subjects of practical spinning and weaving, the testing of fibres and fabrics, and in design and drawing and the analysis of cloth.

Equipment.—The department contains a complete plant for ginning, mixing, opening, carding, combing, spinning, roller covering, doubling, gassing, reeling, preparing and bundling cotton yarns, and for the spinning of waste cotton, the preparation of cotton and mixed yarns for the loom, the manufacture of cotton and mixed goods by hand and power, silk reeling, throwing, preparing,

and the manufacture of silk by hand and power; and for the chemical, microscopical, and mechanical testing of fibres, yarns, and fabrics, arranged as follows:—

Preparatory Treatment of the Cotton Fibre.—Typical cotton gins—Roller and hopper bale breakers, conveying lattices and cotton bins— Willow, compound opener with hopper feed and lap attachment, single scutcher— Revolving flat, roller and clearer, and condensing cards— Sliver lap, ribbon lap, combers and drawing frame— Slubbing, intermediate, roving, and jack frames— Stripping, grinding, and burnishing machinery, for flats, rollers and cylinders, flats fastenings.

Spinning.—Waste, medium, and fine mules, also an experimental mule—Twist and wet ring frames—Roller covering plant— Doubling winder, ring doubler and twiner— Clearing, gassing, reeling, preparing and bundling— Experimental machines and working models— Plans of mills and arrangements of machinery—Specimens of coarse, medium, and fine grey and coloured cotton in various stages of preparation

Weaving Preparation.—Winding machines for warp and weft— Mill, beam and sectional warping machines— Running-off frame for sectional warping— Yorkshire dressing frame— Drawing-in and twisting frame—Dobby card punching machines—Piano card cutting machines— Lacing frames.

Hand and Power Loom Weaving.—Dobby, jacquard, and pattern hand looms— Tappet, dobby, and jacquard looms, with single and multiple boxes— Leno, lappet, terry, plush and automatic looms—Working models— Diagrams and plans of machinery in mills.

Silk Spinning and Preparation.—Cocoon reeling machines— Winding, cleaning, doubling, spinning, throwing, and reeling machines, reel steaming chest, reel stand, dramming and deniering scales, splitting rices, boiling pan, steeping tub and soap cutter, for hard silk; and also the following machines for soft silk: Winding, re-drawing, pirn winding, mill, and sectional warping and winding on.

Silk Weaving.—Jacquard, swivel, gauze, and velvet hand looms, and English and foreign tappet, dobby, and jacquard power looms, with single and multiple boxes, a jacquard swivel and a ribbon loom.

Textile Testing Laboratory.—Wrap reels, scales and balances, microscopes, lea testers, single thread testers, twist testers, mechanical and hydraulic cloth testers, water bath ovens, conditioning stoves, hygrometers, and other appliances for special work.

The driving throughout is by means of electric motors of power ranging from 4 h.p. to 20 h.p. A complete humidifying plant and independent heating pipes are fitted to secure the necessary temperature and degree of humidity.

The class rooms are fitted with every convenience and appliance for the complete illustration of the lecture courses. There are also collections of English and foreign models of textile machinery and appliances and of ancient and modern textiles. The library contains English and foreign books and periodicals relating to the textile industries. The journal of the Textile Society established in the School is issued annually.

The subjects of the course for the first year, with the hours per week devoted to each subject are as follows:—

Subjects.	Hours per week.
Mathematics	4
Mechanics	1
Experimental Mechanics and Sketching of Textile Machinery	2
Geometrical Drawing	2
Textile Engineering Drawing	2
Physics, including Laboratory	3
Textile Fibres and their Preparatory Treatment	1
Spinning Calculations	1
Fabric Structure and Weaving Caculations	1
Weaving Mechanism	1
Principles of Colouring	1
Freehand Drawing	2
Technical Design and Analysis	3
Practical Spinning Practical Weaving	6
Total	30

SESSIONAL PAPER No. 191d

Special Day Course for Engineers' Apprentices.

This course is arranged to afford facilities for the instruction in special day classes of selected apprentices employed in engineering works. Fee for each year of the complete course, £1 10s.

Candidates should give evidence of a satisfactory knowledge of mathematics and mechanical drawing, and be of such good character in respect of conduct and capacity as to deserve the privilege of attending this course.

In order that the organisation and business arrangements of works from which apprentices are drawn may be disturbed as little as possible, classes comprised in the course are held on Monday, extending from 9 a.m. to 1 p.m., and from 2 to 6 p.m. throughout the whole session of 40 weeks.

The subjects included in the course are as follows:—

First Year:	
Mechanics Lecture	9 a.m. to 10 a.m.
Physics Lecture	10 a.m. to 11 a.m.
Mechanical or Physical Laboratories	11 a.m. to 1 p.m.
Mathematics	2 p.m. to 4 p.m.
Engineering Drawing	4 p.m. to 6 p.m.
Second Year:	
Mathematics	9 a.m. to 11 a.m.
Properties of Materials and Theory of Structures (First Term)	11 a.m. to 1 p.m.
Theory of Machines and Theory of Heat Engines (Second Term)	11 a.m. to 1 p.m.
Electrical Machinery	2 p.m. to 3 p.m.
Electrical Laboratory	3 p.m. to 4.30 p.m.
Engineering Drawing and Engineering Laboratory	4.30 p.m. to 6 p.m.

The time thus arranged is equal to that given on four evenings per week in the evening classes, and, moreover, the session is some ten weeks longer than the evening session. The student has the further advantage of being relieved from attendance at evening classes, so that he has full opportunity to prepare the home-work and do the reading required, and under these circumstances can obtain a more extended and more satisfactory course than the evening classes afford.

Students who propose to take the second year course must take a paper equal to that of the final examination in Mathematics of the first year.

Text Books—First Year; Algebra, Hall and Knight, 3s. 5d.; Trigonometry, Hall and Knight, 3s. 5d.; Machine Construction, Crye and Jordan, 2s. 3d.; Applied Mechanics, Cryer and Jordan, 2s. 3d.; Class book on Physics, Gregory and Hadley, 4s. 6d.

Second Year: Practical Mathematics, Saxelby, 4s. 11d.; Testing of Materials, Popplewell, 10s. 6d.; Strength of Materials, Popplewell, 5s.; Graphical Statics, Gray and Lowson, 2s. 8d.; Heat Engines, Ripper, 2s. 3d.

Special Day Course for Plumbers' Apprentices.

This course, which extends over two years (with a special course for students who can attend for a third year), is intended for the education and training of plumbers' apprentices. Fee for each year of the complete course, £1 10s.

Candidates must not be less than 16, and should possess a fair knowledge of the preliminary subjects connected with plumbers' work; should be nominated by their employers as of good conduct and capacity, and worthy of the privilege of attending the course; and are required to attend regularly and punctually, and do all the necessary home-work. Reports are periodically submitted to employers on the p ogress of their apprentices, and those students who pass satisfactory examinations and make the required attendances during the two years' course receive certificates.

Evening Classes.

SCIENCE AND TECHNOLOGY.

I.—General First Year Course.
II.—Pure, Practical, and Applied Mathematics.
III.—Mechanical Engineering.
IV.—Pure and Applied Physics.
IVa.—Electrical Engineering.
V.—Architecture and Builders' Work.
Va.—Municipal and Sanitary Engineering.
VI.—Pure and Applied Chemistry.
VII.—Photography, the Printing Crafts, and Bookbinding.
VIII.—Textile Industries.
IX.—Dressmaking, Millinery, Plain Needlework.
X.—Natural Science.
XI.—Miscellaneous Technical Subjects.

Group V is chosen as representative of the work in the other groups.

ARCHITECTURE AND BUILDERS' WORK.

This course provides for the complete training of men engaged in the Building Trades in the theory and practice of Building Construction.

It extends over 5 years, and evening students following a systematic course and fulfilling the conditions as to examination can thus obtain the diploma of the school.

The instruction is at once theoretical and practical, and wherever possible students are counselled to take full advantage of the workshop and laboratory courses.

Many of the subjects of study in the more advanced stages will be found of especial benefit to articled pupils of architects and surveyors. Excellent facilities are provided for the study and testing of materials of construction.

Particular attention is directed to the important courses in the subject of Sanitary Engineering, which are of special value to architects, surveyors, engineers, and to others engaged in the work of local government administration.

There are special courses for House Painters and Decorators, Cabinet Makers, Masons, and Metal Plate Workers.

SESSIONAL PAPER No. 191d

SECTION 3: CONVERSATION WITH MR. J. H. REYNOLDS.

Information obtained in "Conversation" with MR. J. H. REYNOLDS, *Principal, Municipal School of Technology, Manchester.*

Mr. Reynolds said he kept in close touch with the industries of the particular neighbourhoods, and reported monthly to different firms on the progress of boys. If building trades are strong in a neighbourhood, he provided courses in those trades; in another section the inclination might be in the direction of chemistry. While very glad to allow any persons who took an interest to form an advisory committee, the activity of such a committee would make the management very cumbersome.

The real crux of the success of evening classes is that employers be kept in sympathy with the work and believe in its advantages. Boys going into evening school do better from every point of view than those who do not; not only from good influence as to character, but from getting the kind of knowledge to make them more observant, more intelligent and more in touch with their daily work. They get the elements of practical arithmetic, drawing, mechanics and physics; and every endeavour is made to illustrate the principles and apply the boy's knowledge directly to his work. If employers are in sympathy, the school succeeds, but it is difficult to get the sympathy of employers in a small way of business, because they want to get as much as possible out of the boy.

The enormous amount of overtime in the workshops troubled Mr. Reynolds, who finds the greatest difficulty in maintaining evening attendance when trade gets busy. The men who attend such institutions as these, paying their own fee and giving their time, never come to waste their time, and would not attend if it were not for their advantage—which is necessarily that of their employers.

VALUE OF EVENING SCHOOL.

The evening school has been an enormous gain to Lancashire, having been the means for 60 or 70 years of enabling a large number of men to raise themselves to positions of responsibility, and in some cases affluence, as the result of such training. No two counties in England are doing more for the education of the artisans and persons employed in the day time than Lancashire and Cheshire. One cause of this is the tradition that has grown up in these two counties in favor of adult education, and the strong interest always taken in the various institutions such as the Mechanics' Institute, established long before the present Acts of Parliament. There is a Union comprising all the evening institutions of the two counties, whose committee meets monthly in Manchester, and virtually controls a great deal of the continued education carried on in the two counties. This year at least 120,000 papers have been worked in the various subjects relating to continued elementary education, apart from the Science and Art department. The men in control are thoroughly interested in their respective institutions, and are doing a thoroughly effective work. They set the papers and largely control the teaching. The movement is growing in influence and numbers.

Germany Gains on England.

Mr. Reynolds was of opinion that up to a certain period there were numerous reasons why England should be in the position she does occupy—her geographical position, climate, natural resources and the energy and capacity of her people. All those things gave England her position. But times have changed, and the last 40 years have created a revolution in industry, especially chemical and electrical. Germany has gained on England because more intimate knowledge of natural phenomena has become necessary in industry, and the native capacity and other adventitious causes of England's success no longer apply to the same extent.

Education Helping Workingmen.

Conditions of living among the workers have greatly improved since 1851. Mr. Reynolds has been among working people all his life, and the difference in that class is enormous. That is quite consistent with the fact of a large number of derelicts, because the population was increasing by millions and there is as deep poverty to-day as ever existed in the nation, and a good deal of it. Education has reached every class of the community since 1870. Before 1870 Manchester was not more than a third of its present size, yet there were 16,000 children running about the streets going to physical destruction. Now every child is looked after. The amenities of life are much better attended to now. At that time there were 20,000 people in Manchester living in cellar dwellings, practically holes in the ground. There has been an enormous improvement in the standard of living; people will not endure to-day what they endured then; the outlook generally has improved. More than a generation of workers has gone through the schools who before 1870 did not go to school at all.

Mr. Reynolds said that, when he was a young man, he had taught reading, writing and arithmetic regularly on Sunday afternoons, and many men who are to-day in good positions never got any other education except what they got in Sunday schools, which were very powerful at that time in this city. Personally he would not mind using Sunday now in that way, but public sentiment is against it. At that time people had no other chance, for they worked very long hours. The Saturday afternoon holiday is only about 60 years old; before that everybody worked till ten o'clock on Saturday night.

Mr. Reynolds said that while Technical Education is more highly appreciated by the public than it was 15 or 20 years ago, yet men like himself, urgent in the pursuit of this work, felt the want of sympathy. In his opinion there is not the same appreciation of education as a whole in England as there is in Switzerland or Scotland. Referring to a meeting he had addressed, when the question was afterwards asked him why he should have been talking to them about the value of education when there were plenty of men in the room worth £30,000 who had never been to school in their lives, Mr. Reynolds remarked that conditions had largely changed, and such men would not now have as good a chance to get on; but we must recognize that an Englishman can make a vast deal of use of a very small amount of knowledge.

Education in Manchester.

There is only one public educational authority in Manchester, and Mr. Reynolds was against a division of authority—one controlling elementary and secondary education and the other controlling technical education—because education is one thing and rests on a broad basis if it is education at all. As soon as a child is able to go to school, it must be trained body, mind and soul, up to a certain age. The vast majority of children must go work at 14; so the problem is how far you can pick out from the ruck of children those able to extend their general education to a later day.

In Manchester the evening classes are held in the elementary school buildings. If a boy is taking secondary education, Mr. Reynolds would continue his general education in the secondary school; he was against specialization either in elementary or secondary schools. If he knew a boy would be leaving at 14, he would arrange his subjects carefully, but they would still remain general subjects, for nobody knew how he was going to get a living.

There should be some trade schools for elementary boys and girls, because he thought the time was short enough to give them a broad, sound basis of general education. This was quite consistent with carrying the kindergarten principle right through the whole course, to train hand and eye the whole time, so that whenever a boy leaves school, his mind is alert, he has been taught to use his hands in co-ordination with his eye and other faculties, and he is fit for any job that anybody likes to put him at, the question not being how much he knows, but how he has been trained.

One of the most important things, Mr. Reynolds thought, was a thorough knowledge of English and all that that implies, which is more than mere knowledge of grammar and rhetoric, and includes the history of the country and the whole language. If this, with a knowledge of geography, were made important features of the schools, and the applications of mathematical training were made clear to the boy, he did not see why these things should turn the pupil from industrial pursuits at all.

Training of Leaders.

The question of training leaders in industrial activities—whether they should be men who had had training in the shops or those who had been reserved longer for training before going into the shops—was rather a difficult one in Mr. Reynolds' view. He thought that it would be a great advantage to get young fellows who had had a year or so in the shops to come to the Technical Institute in the day time, provided they kept up their knowledge; but if they allowed their school knowledge to grow rusty, they would find great difficulty in taking a position in that Institute after a year or two. The German Technical High School now requires that very thing—that at 18 or 19 a boy must go into the shops, and then for four years go to a Technical High School. That drives a man to 23, or, counting a year for military service, 24, which makes him too late in an industry. One difficulty in Manchester is that once a fellow has

got into a shop and found his feet there, he is not likely to leave it because he does not know that he will get back readily, and he would rather stick there and go to classes in the evenings and do the best he can.

Day-time Compared with Evening Instruction.

Mr. Reynolds was in favour of part time work by which apprentices attended the Institute for a full day weekly, and expressed decided preference for that plan over having them come two or three times a week for a few hours. He thought it was one of the best features of the work that they were doing, but it had not got on as it should have done. Seven hundred are now coming in from 16 to 18. He thought the advantage is unquestionable. The school term is 40 weeks, or 320 hours, as against 180 hours of evening work at the very most, with the advantage that their evenings being free, they could do their reading and homework, and get reasonable recreation. If men were let off at 5 o'clock and came to the evening classes, it would not be as well as having the day's work at the Institute. When the man has had his rest and comes fresh to the study, the Institute can begin serious work with him and keep it up all day, without his flagging. That was a feature in favour of the choice of Monday. What is really wanted, in Mr. Reynolds' opinion, is some legislative measure whereby a boy leaving school at 14 to 17, would get time enough to continue his education in the day time. That would mean that he should not be expected to go more than 30, or at the very outside 35, hours weekly to his employment. That would enable the Institute to deal with him satisfactorily from the point of view of his education. However the plan of giving one day weekly can, in the best circumstances, apply only to a small number.

Mr. Reynolds has not an atom of sympathy with legal compulsion to attend evening classes. If there is to be any compulsion, it must be on the employer to give the time in the day, and not on the parent or the boy. It is impossible to do it in any other way.

When Boys Leave Schools.

Every week the City Education Department sends to Mr. Reynolds' office a list of boys who have left school that week. Mr. Reynolds' office writes to the boy, and if it is late in the session, says "Here is a permit to entitle you to come next session, or to an evening school, for so many hours a week," Mr. Reynolds had found that more than half attended the classes at their own cost. A number of scholarships were given to evening students, and the plan worked well.

As to the increased value to employers of apprentices who attend the school, as against those who do not, Mr. Reynolds said there were various opinions. Plenty of people, especially those engaged in engineering, say that technical education in evening classes is not worth a straw. Such people will ask, "Why does the boy want education? He has only to turn a machine;

he simply minds the machine." That is all they want. Mr. Reynolds' point of view was quite different. He said to the boy, "While you are minding that machine, try and improve yourself in the direction in which you are engaged; follow up all about it." It is an individual matter for the boy; it is not for the employer to say he does not need education.

Attitude of Trades Unions.

As to the attitude of the trades unions in Manchester, Mr. Reynolds said they had not been any obstacle to technical education, but they had not given any impulse to it. He had always found the trades union officials sympathetic, but he could not say he had had any help from the trades unions in the movement for the training of artisans engaged in various trades. Asked as to the motive of the Plumbers' and Steamfitters' Union, which objected to the admission of men not engaged in that business, who afterwards decided that all their apprentices should attend the schoool, Mr. Reynolds said he thought there was a feeling among the plumbers that the class had given them something of real value, because plumbing is a trade which may be done on a large or small scale, and is mostly done by the small master who has at most two or three men and an apprentice, and cannot give the apprentice the range of work sufficient to make him a good workman. Another factor is that many things in plumbing that now require great deftness and skill are being made by machinery, such as the bending of pipes; the plumber does not know how to make a drop or bend lead or boss it up. The school gives opportunity to learn these things.

He had had trouble with the Printers' and Lithographers' Union, who had objected to salesmen in shops entering these classes, but Mr. Reynolds had argued, "Who is going to get the orders by which you live? If a salesman understands these processes, he is going to bring you trade, because he can talk to the customer far more intelligently, and he needs to know all about the various processes." So a salesman may go to learn bookbinding, that he may talk more intelligently about it. An articled clerk in an architect's office might enter a plumbers' class, and Mr. Reynolds would not object, and would tell the plumbers that it would be good for them, because such a man would not be content that a contractor would have his own way, but would have something to say for the plumber. Mr. Reynolds thought that objections in such cases were through ignorance, and through taking short-sighted and narrow views of the question.

Machinery Discourages All-round Skill.

In the last thirty or forty years automatic machinery is used to a tremendous extent in making, on a wholesale scale, things which need only putting together. The classes in carpentry and joinery are not nearly as well attended as they should be because of this. A man has very little chance to become a chief joiner. When the enquiry was made in London, they found no London boys in the building firms, because they took improvers from the country where they learnt the minutiæ of the business in small shops.

Mr. Reynolds said that his Committee had just bought 12,000 yards of land for a Domestic Science School that would accommodate 300 day pupils. Women are being trained as domestic economy teachers not only for Manchester but for anywhere. The present building is not big enough to afford room for everything they need in Manchester. They had no room for motor car engineering, though it is a good thing; but short courses of instruction are given to fellows of more or less experience and expert knowledge. If they think there is anything desirable to do, Mr. Reynolds at once takes it up and gets the committee to sanction the establishment of a class or classes in such work.

Mr. Cowan, Mr. Reynolds' assistant in the evening classes, has the organization of the evening classes all over the city; and if there is a district without a satisfactory class, or a demand in a neighborhood for a class, one is put there. The Manchester Institute arranges for instruction on Saturdays, and men come from as far as Hull, 120 miles away, returning the same night. Any subject that is likely to be interesting is taken up. For example, Calico Printing and Engraving were taken up a year or two ago, there having been no classes at all for those engaged in that work. Sometimes classes run dry in three or four years, all possible recruits having been exhausted. The classes were open to everybody, and the fees the same to people in and out of the city, or in and out of England; and Mr. Reynolds said he would not make a difference in the fees as between residents and non-residents.

The Institute's Cost and Policy.

This school costs £18,000 yearly, above all received by way of Government grants and fees. The grant from the Board of Education (London) is nearly £11,000. The balance is borne by local rates and fees, the latter, which are very low, only a few shillings, totalling £5,000.

The graduates have as high standing as graduates of the Imperial College. It is a three years' course, and sometimes four, and stands as high as any degree course of a University.

Mr. Wrapson, the Assistant Superintendent, said that after all his experience it was not practicable to teach trades fully in school or in an institution; and he objected in particular to being asked to produce articles that could be sold, because the tendency would be to subordinate the instruction and training of pupils to getting work out on time or getting work that would have value. In the School for Commerce there was special attention given to training men for municipal service, and in the Technical School to training men for municipal service by way of management of motor cars; therefore while the rates for maintaining the schools were a tax, it was an economy in training their own servants for saving the municipal property and doing better work.

CHAPTER VIII: LEEDS.

SECTION 1: INTRODUCTORY.

The city of Leeds has a population of 445,600. Its chief industries are mechanical and electrical engineering, textiles, building and allied trades, commerce, leather and boot trades, clothing trades, mining, printing trades and chemical industries.

In 1905 statistics of the occupations of the residents in the different parts of the city were compiled to ascertain,—

(1) What industries were carried on in Leeds and their relative importance, with a view to deciding whether the supply of Technical Instruction was sufficiently complete and varied to meet the needs of the population;

(2) Whether the schools and classes in existence were conveniently placed with respect to the homes of those who might be expected to attend them.

Maps were prepared showing the areas where the heads of families engaged in the various industries lived. Another map showed the location of the various classes and schools adapted to the occupations. By superimposing a transparent copy of the latter over each of the former the adequacy or inadequacy of convenient provision was at once seen. On that basis plans for development and extensions were made. These provided particularly for the residents engaged in occupations as follows:—

Occupations.	Heads of Families.
Mechanical and Electrical Engineering	7,500
Building and Allied Trades	4,750
Commercial Occupations	4,400
Leather and Boot Trades	3,160
Clothing Trades	2,900
Mining Trades	1,300
Textile Trades	1,130
Printing and Bookbinding	800
Chemical and Allied Trades	700

Provision was made also for Bakers, Glass-blowers, Furniture Trades, Carriage Builders and Wheelwrights, Watchmakers and Jewelers and other industries.

Technical Courses.

The courses of Technical Instruction in Leeds are well graded, ranging from the general evening Continuation Schools up to the University of Leeds.

The first grade is taken in the general evening school; the second in the various Mechanics' Institutes and Branch Artisan Schools, the latter for elementary courses, the former both elementary and intermediate. The third grade comprises the Central Technical School, the Cockburn Technical School

and the West Leeds Technical School (the latter for advanced courses); while the fourth grade is taken in the University of Leeds. Grade I covers preparatory courses; grade II the 1st and 2nd years technical courses for all trades; and the 3rd year course in Mechanical Engineering and Building at the Woodhouse Mechanics' Institute, and others taking this work; grade III comprises 3rd and 4th year courses in Mechanical Engineer ng, Electrical Engineering and Building, 3rd year in Chemical Trades, and 5th year in Mechanical Engineering; also Mining, Tailoring, Boot Trade, etc. The University offers advanced courses in Mechanical and Electrical Engineering, Mining, Textiles, Leather and Dyeing.

Evening Courses, Etc.

The evening Art instruction is well organized in connection with the *Central School of Art*. There are preparatory Art schools and branch Art schools leading up to the Central School, the aim of the entire co-ordinated instruction being the advancement of the industrial arts.

A special Saturday course is held for Teachers.

Evening craft courses are held in Bookbinding, Painters' & Decorators' work, Lithography, Cabinet Making, Stone Carving, Jewelry and Silversmiths' work, Jewelry Repairs, Wood Carving and Wrought Iron work.

Evening Commercial Work is organized from the general evening schools, through the branch commercial schools, the Central School of Commerce and other institutions of similar rank, up to the University.

Evening work in Domestic Arts is begun in the general evening schools, continued in the various Young Women's Institutes, and concluded in the Central Institute for women and girls. The subjects taken are English, Household Accounts and Correspondence, Cookery, Needlework, Laundry, Hygiene and Home Management, Dressmaking, Home Nursing, arranged in group courses.

Exhibitions and scholarships are available, in all the various branches of evening work, to higher institutions.

Training courses for Teachers of al grades are fully provided for, the subjects including Manual Training, Singing, Elocution, Physical Training, Art, Nature Study, Photography and Modern Languages.

There is a *School of Music* under the Leeds Education Committee.

SECTION 2: CONVERSATION WITH MR. JAMES GRAHAM.

Information obtained in "Conversation" with Mr. James Graham, *Secretary for Education, Leeds.*

When Mr. Graham came to Leeds seven years ago he prepared a memorandum of the trades and industries of Leeds, taking a census of all the houses from £30 a year rental downwards, with six maps to show the locations of the

workers for the different trades. Then they set to work to plant preparatory courses in Evening Schools, where they made good what young fellows had forgotten of their ordinary education. Then they put down Intermediate Schools of an artisan type for those engaged in works, giving a two years course; also Intermediate Schools of a commercial class; Intermediate Schools of a domestic class for women; Intermediate Schools with artistic classes for Art students, etc., then large Central Institutions.

They fixed the number, stuck to that number, carefully selected the men and started to train teachers, putting them through a two years course, during the first year of which they had to retail out what they got on Saturday mornings and certain evenings; but at the end of the second year they had covered practically the whole course, and the Intermediate Schools were running all right. For the Central Technical Schools they looked to graduates who had specialized in certain directions, and to men who were graduates engaged in practical work, or in special departments of the corporation, or as civil or electrical engineers, and put them in charge of the classes.

In a few years the whole course was running. They set up a system of registration, of record cards showing attendance and work, so that in a few years all the pupil had to do was to show his card and the new teacher knew exactly where to put him in the course. One problem was to lead young fellows on to higher institutions, and men who had been doing good work for two or three years were helped by technical scholarships on to the University. They went there full time, and were paid their full maintenance allowance. Ten of those scholarships a year were offered and the men proved the best in the technical department of the University.

Practical Industrial Art.

Art in Leeds in the past began and ended on paper; it finished up with beautiful drawing, highly coloured, which might be awarded a silver or bronze medal. Mr. Graham felt that was not sufficient, and he brought over from the School of Industrial Arts, Geneva, Switzerland, an exhibit showing how the paper work was carried along through many stages and an artistic object produced in the form of a vase or statuette or piece of jewelry or a hundred and one other things. The actual artistic object was the finished product, instead of a design which remained on paper. That exhibition seven years ago opened the minds of many educational authorities, and caused them to turn the artistic teaching and training of England on to the craft basis. The Leeds School of Art has gone a long way in certain directions and certain crafts.

How Advisory Committees Help.

Behind every craft or trade there is, in addition to the general Managing Committee of the school, an Advisory Committee of experts connected with each craft or trade, called together to consider or suggest any new development, to visit other places, to advise how the school should be equipped or the course

developed, and later on to visit the courses in progress, criticise the work, suggest improvements, and in a general way offer useful advice to students. The work of some of those crafts has greatly developed the different callings into which art feeling and instruction enter. The school has helped very largely to develop printing and lithographing trades, boot and shoe trades, etc. The process-engraving work of Leeds used to be sent away to Manchester, but as a result of the school's new process department a large number of the big printing works have developed process departments and a good deal of engraving is now being done in Leeds.

Boot and Shoe Trade Revolutionized.

The boot and shoe trade used to be chiefly the heavy boot with thick soles, for working men. Even that was dying out; many of the big manufacturers were folding their hands and heaving sighs because the prosperous times had departed, never to return. But the schools set up boot and shoe training classes, which gradually developed until now they have had to be taken into the technical schools and put into a separate building as a Boot and Shoe School. It has a modern up-to-date equipment under an arrangement with the machine makers that if they bring out an improvement on the machine now in school the old machine can be discarded and the new introduced by paying them a small sum per annum. Those machines are obtained at a very cheap rate because the school allows any prospective buyer to come and inspect them at any time. The boot and shoe business has been revolutionized in Leeds; the trade is now in light boots and shoes; and Leeds manufacturers can hold their own against the light boots of any other place. The U. S. boot trade has practically disappeared from England, although at one time it looked like collaring the whole British market. At present the English makers are busy clearing them out of the foreign markets. The export of boots from England is going up by leaps and bounds, running into hundreds of thousands a year and steadily increasing. That shows how co-operation between employers and the school can bring about a revolution in a trade, and regain ground which seemed to be absolutely lost.

How do the boot and shoe employers help the school? In many ways. They send their work people. Then if in the course of instruction the school wants a hundred pairs of boots at a certain stage of finish—say they want rivetting or finishing in a particular way—they have simply to ring up a number of shops and tell them so, and at the hour named the boots at that stage of manufacture are at the school, and are handed around to the students. The whole process is explained theoretically; the students are shown practically how the job is done; they make a trial of a quarter or half an inch, which is carefully watched; then another quarter of an inch, which is carefully inspected; then they are allowed to go ahead. That lesson in theory and practice is given, and the following morning the boots are sent back to the manufacturer. At any time and at any stage the manufacturers are always glad to let the school have the material at the stage required to carry on the manufacture one stage further.

Interest of Employers Aroused.

To get the interest and sympathy of the general employers of labour was a tough task. They took no notice of letters; then a man who had been in an engineering shop was engaged to interview the employers of labour and work up interest; also to call on boys who were leaving the technical schools, or who had gone into workshops and ought to be attending the technical school. That plan was very successful . Still the man engaged could not get hold of the big employers; and finally Mr. Graham and another gentlemen interviewed them. In some places they were received rather coldly, and in others with decided opposition. However, they persevered, returned, and in most instances succeeded. If they did not gain active support they asked employers of labour if they would let young fellows who were attending the technical schools leave half an hour earlier on school nights, and let them come to work after breakfast on the morning following their attendance at night school? Would they pay the fees? Would they let attendance at the technical school count towards promotion? and a number of other things. They got out a series of printed bills. The employers looked them over. One man would pay the fees and do nothing else; another would let apprentices leave a little earlier. A hand bill was printed for each one of these; finally a bill for the man who was prepared to do everything . This hand bill had every appearance of having been printed by the firm, and in a blank was inserted the name of an important clerk connected with the works who was told off by the firm to receive the names of young people who intended to go to the technical schools during the coming winter. This man proved to be a point of contact between the school and the works—one to whom Mr. Graham could go and discuss questions or deal with difficulties at any time. That was found very useful. The hand bill gave an outline of the courses.

Practical Ability Developed.

All this work resulted last year in an increase of 500 students, and this year an increase of 800 students, or a total of 1300 in two years in the evening technical schools.

The idea gradually permeated the whole of the technical schools of Leeds, which have 7,000 odd students, that they meant earnest work. The result is that they won't tolerate any student who is there wasting time; they are all ready for work; there is now an atmosphere and feeling different altogether from what prevailed formerly. Home work is secured in considerable quantity—an evidence of personal work on the part of the students; and a separate register is kept for this home work.

For the future, Mr. Graham does want to see day technical education in England under that of the University grade. He wants to see work such as that done at the Holbeck Preparatory Trade School put into every elementary school for boys throughout the length and breadth of Leeds, so that between the ages of twelve and fourteen they will have knowledge of the principles underlying

all the main trades of Leeds; their English will be much better than at present; their ability to draw will be much better. They will be able to read a plan and make measurements, and able to work out any practical arithmetic sum—based on measurements, statement of machinery details, etc. In short they will rapidly become skilled workmen either at the bench or at the lathe. If they are going to be that, the sooner they are into the works after 14, the better for the boys as mechanics.

Compulsion and Half-Time.

Mr. Graham would like to see an Act of Parliament making attendance compulsory between 14 and 18, so that half the boys would be in the works half a day while the other half were at the technical school, theory and practice thus going on hand in hand. This alternation could be for half-days, or half-weeks. In the shop the boy might be kept at one machine and become skilful at it, and as part of the competitive system he would be able to turn out an article accurately in a certain time, and thus enable the British engineer or workman to compete with his brethren at home and others in foreign markets. In the technical school the boy would be taught the theory of the whole trade, with an opportunity for practice on other machines. There would be sufficient equipment in the technical school to show how the theory was applied. By this half-time plan the boy would go through the whole trade and understand both theory and application . Skill would only be got in a workshop, but you would have a workman who, in case of upheaval in the trade or of his being turned from one department or trade, could enter another; he would be quickly adaptable and could pick up any trade because of his thorough knowledge of the principles underlying that trade, for the principles underlying all mechanical trades are practically the same.

This is what Mr. Graham hopes to see for the workman: "Out of the mechanic will come the foreman. There will always be an upthrust of brains; and we will have men who become managers and possibly controllers of large firms. That plan, joined to selection of the brightest boys who have worked four or five years in evening technical schools, who have worked on this half-day system, and who are sent to the University and kept there three or possibly four years with all fees paid and a maintenance of ten shillings a week, will produce an army of workers trained and adjustable, ready to face all possible competition, whether from Germany or anywhere else."

Scheme Linked with University.

In drafting the scheme of Technical Education for Leeds the scheme of education was arranged according to the amount a young fellow could cover year by year in a technical school. The first two years were devoted to the general Evening Schools, the second two years to the Intermediate Schools, and the next three or four or five years to the Central Technical School or School of Art or Commerce or Domestic Science. The advanced science and

the honors work were left to the University. In view of the very expensive equipment at the University it was considered unnecessary to duplicate that by putting it into the Central Technical School; so the education authorities worked out a co-ordination scheme and arranged with the University what they would do in regard to technical work during the day and evening. After this was agreed to the whole of the expensive University equipment became available for evening students, who can either go there entirely for the work or take part of it in one of the Central Technical Schools. This plan is working very satisfactorily and saving a great deal of money. The University is working very heartily with the Technical School, and in their evening department doing very excellent work.

When the technical organization was set up at Leeds the number of University students was inconsiderable, and the Principal was very much exercised. Mr. Graham told him, "You will lose students for two or three or possibly four years; at the end of the four years we will begin to turn into the University pupils who have been in our grade 1, 2 and 3 schools." Now about 80 pupils have been through the whole scheme, and are ready to take advantage of anything the University can give them, and move ahead very rapidly. Young people were lifted out of the workshops at the age of 22 and sent to the University; several groups have already passed from the University and are now filling very important controlling positions, thus showing that the money has been exceedingly well spent.

Strong Secondary Education Wanted.

When Mr. Graham came to Leeds seven years ago they had a Grammar School for boys and one for girls, sadly in need of reorganization; two small Catholic Schools; two Higher Grade Schools, largely fed by boys from the elementary schools at the age of 12; not secondary schools as he understood them, but simply continuations of an elementary school. What he wanted, and what they are now getting, was a secondary school system giving a secondary school education, having its foundations laid in the kindergarten at 5 to 7 years, steadily developing through the years to the age of 17 or 18, and then rounded off and completed as secondary education, making pupils ready for the University. Leeds now has a strong system running from 5 till 11 or 12. Then scholarship holders from the elementary schools, 200 or 250 a year, act as tributaries to the main school; they take hold of the idea of the secondary school, and are indistinguishable either on play-fields or in class-rooms from the product that has been in the school since the age of 5 or 6 or 8. That result is secured by the atmosphere that has grown up from the age of 8 years. The idea is to carefully select the Principals, then give them a free hand and let them develop a system of schools every one of which differs from every other within the system, so that all the schools will not be as like as peas from the same pod.

There are roughly 3,000 pupils in Leeds secondary schools; 25% come in with free places, and a fair number of others pay fees; 483 last year came in

directly from the primary schools and paid the fee. Probably 700 would come from the elementary schools of the city or outside, either to pay fees or come in on scholarships. They come in about the age of 10 or 12.

SECTION 3: CONVERSATION WITH MR. BEES.

Information obtained in "Conversation" with Mr. Bees, *Assistant Secretary for Education, Leeds.*

Mr. Bees, as assistant to Mr. Graham, said the educational movement in Leeds during the past 7 or 8 years had certainly been very rapid. Primary education had been too bookish; what was needed was to train the child in initiative so as to develop its capacity to do for itself, to take advantage of its surroundings and make the best of them. More education is wanted on the lines of Holbeck Trades Preparatory School, where the teacher does very little talking but acts as a guide, pointing out to the lad how he may get over his difficulties himself.

They had failed as regards girls by not having in mind sufficiently what the girls were to do afterwards. As 90% of them ultimately are in charge of homes, education should enable them to be good wives, good mothers, good home managers. The curriculum for girls ought to be threefold: On one line the study of English, which should consist very largely of reading, with the object of giving girls a liking for reading good matter and also something to occupy their leisure in a satisfactory way. On the second line they should have lessons on home-management, including personal hygiene and management of the home generally with certain associated lessons in good household cookery, laundry work, etc. The third line should be handicraft with its basis in needlework, built upon which there might be simple dressmaking, etc. With a curriculum of that kind, girls between 12 and 14 could be made good home managers.

Education One Complete Plan.

Education had in the past been dealt with as so many distinct sections—elementary, secondary, technical, etc., whereas it is simply one complete thing, with each section running very smoothly into the other. In Leeds they had tried to secure the influence of the primary school teacher in helping suitable boys and girls to go forward into Trade Schools and also to go on to evening schools without wasting any time. Absence from school causes loss of power, of concentration of thought and application; hence the effort to have pupils come direct from the elementary to the evening school without an undesirable break. All that can be done to break down the barrier between the ordinary day school and the Technical School would be an advantage to the student and to the community. Another development was to secure the interest and co-operation of the employer of labor, who unfortunately now looks on the

whole of his business simply as a commercial thing, as a matter of getting good dividends, the exception being to find one who looks on the employee as a human being who needs assistance in the way of education. A few employers have assisted their employees to enter Technical Schools. What is wanted is to get the employer to feel that in his business he needs boys who have taken a certain amount of technical instruction.

Securing Parents' Interest.

Another line of development is to secure the interest of parents in education. Unfortunately now the parent is keen to get the child away from school at the earliest possible moment, and looks on education as something that must be done, but something that he would rather had not to be done. No doubt many parents need the money that can be earned by the children, but they do not seem to be able to look beyond the few shillings of earnings. Crowds of boys are leaving day school for various employments which give them a fair wage for three or four years; then when the boy is becoming a man and wants more wages he has to leave, and some younger boy from the Technical School takes his place, while the untrained boys go to swell the army of casual workers, and finally a large number of them get into the ranks of the unemployed.

Recently an Advisory Committee for Juvenile Employment has been appointed with two important functions. The first is to give the child, and the parent wherever possible, advice as to the child's employment. It is hoped a large percentage of parents will take advantage of such advice and put their boys into employment which will likely be lasting, and not throw the boy on the streets in three or four years. The Committee will also watch the boy or girl after getting into work, and encourage them to take advantage of an opportunity for further education.

SECTION 4: HOLBECK DAY TRADES PREPARATORY SCHOOL.

This School was opened in 1906. The building was at one time a Mechanics' Institute, but has been altered and refitted in a simple manner with suitable machinery and apparatus. The lathes are driven by foot power.

Any boy of 13 who has attended an Elementary School regularly is eligible for admission. The course of instruction is calculated to answer two very useful purposes: (1) the hand, eye and brain are trained on sound common-sense lines with a view to the ultimate employment of the boy in some branch of engineering; (2) the boy has many opportunities of observing and taking part in different kinds of work and processes. His interest is aroused and stimulated. He competes with his class fellows, and often develops ability in quite unexpected directions. By this means the boy is encouraged to select some particular branch and to some extent to specialize thereon, with a view to following it up in the works. When the time comes for him to be drafted into the particular shop

or office selected, he goes with a clear understanding of what is before him and with a mind fully prepared to master all the intricacies of his craft in record time. The leading local employers are in full sympathy with the aims of the school, and evidently the time is not far distant when a full preparatory trade course will be an essential qualification for entry into the better class engineering works.

The course of instruction covers 2 years, and is laid down with the object of improving the general education, developing common-sense and reasoning power, and enabling a boy to acquire the necessary manual dexterity to ensure that he shall be put at once on useful work when he enters the shops.

An undertaking is required from parents that boys will not be withdrawn in less than one year, but they are allowed to go whenever suitable openings to lucrative positions occur. The school authorities prefer that the lads should stay in this school at least a year and a half. The teachers take a personal interest in the lads, and are continually on the look out for places for them.

The attitude of the students was noticeable for earnestness, interest and keenness.

Our Commission secured specimens of the boys' work in this school. These include patterns, castings made therefrom, fine tools, work in tin, etc., The workmanship is excellent as to accuracy and finish.

Plan of Instruction.

The instruction is divided into three sections, each receiving about the same amount of time, viz:, English subjects, Mathematical subjects, and Shop practice.

The scheme of instruction for the first year is as follows:—

Mathematics (Practical)	5	hours	per	week.
Mechanics	3	"	"	"
Technical Drawing	4½	"	"	"
Metal-work	6	"	"	"
Wood-work	2	"	"	"
English	6	"	"	"
Drill	1	"	"	"
	27½	"	"	"

Visits to works, rambles, etc., are also arranged.

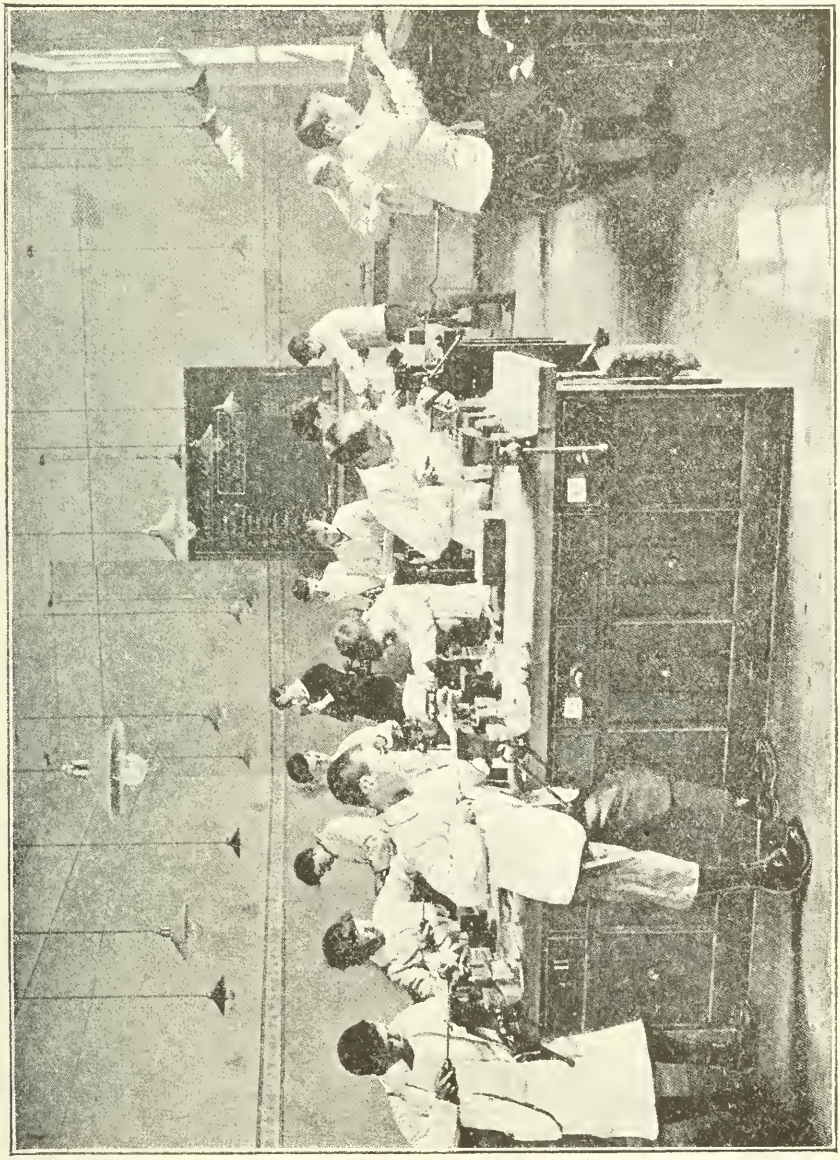
The second year's Course is arranged on similar but more advanced lines, and students of exceptional promise are encouraged to specialize in their work.

SYLLABUS OF WORK.

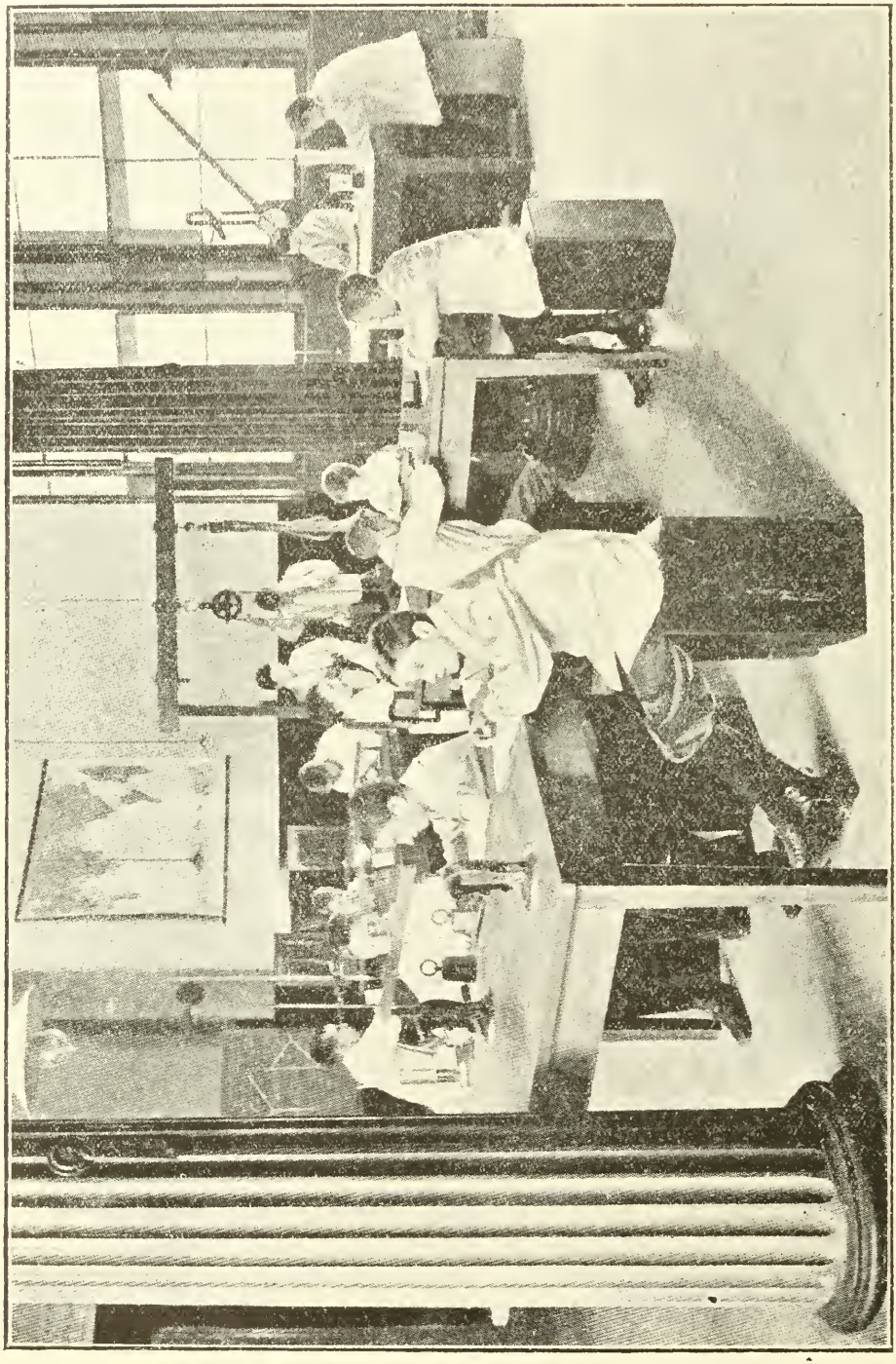
Practical Mathematics.—Revision of Vulgar and Decimal Fractions, English and Metric Units of Measurement, Methods of Conversion, Mensuration, Application to Workshop Problems, Contracted Methods, Averages, Percentages, Simple Algebraic Expressions, Formulæ, Ratio and Proportion, Equations, Graphs, Logarithms, &c.

Mechanics.—Experimental Verification of Simple Laws, Practical Determination of Areas, Volumes, and Weights, The Balance, Mass and Weight, Displacement, The Principle of Archimedes, Density, Simple Calculations on Force, Work, Power, Horse Power, &c.

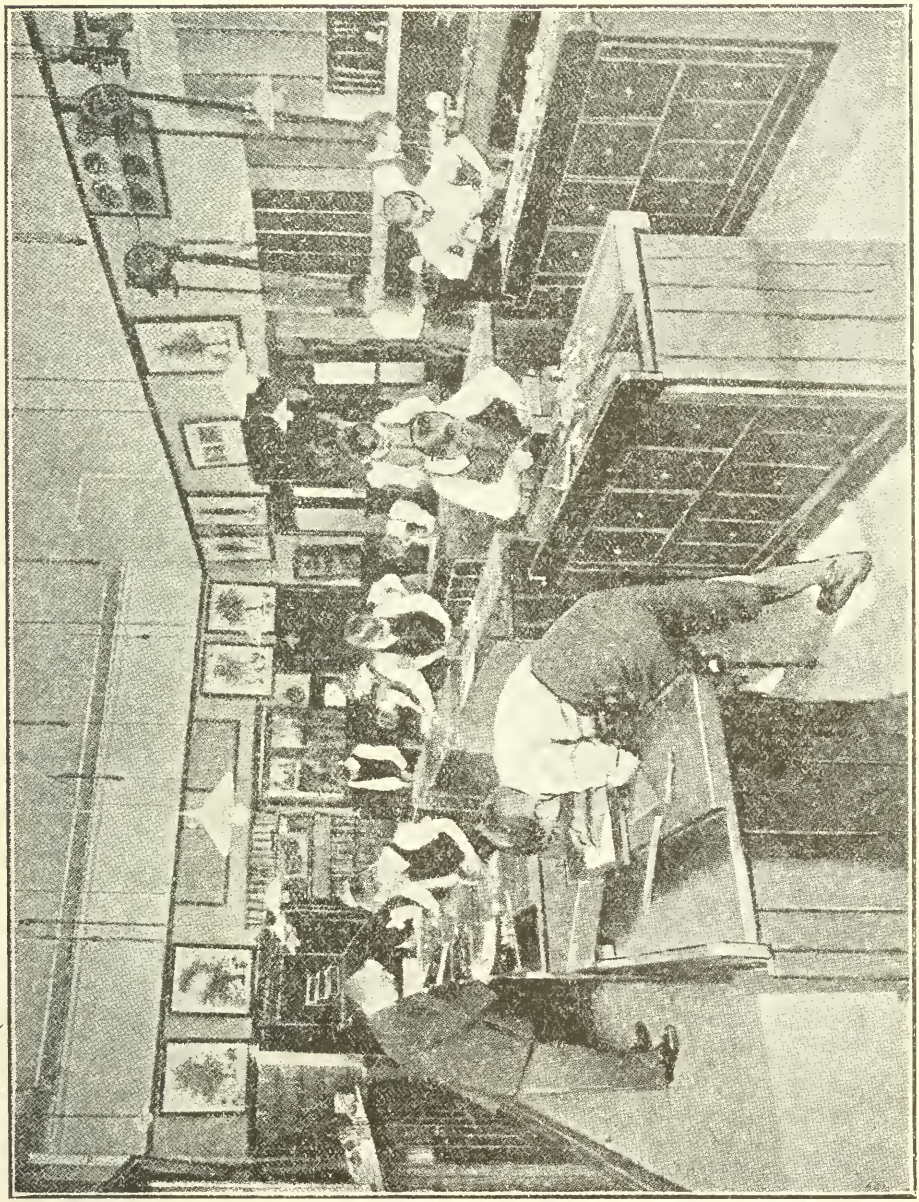
Principle of Moments, the Lever, Pulley Blocks, Wheel and Axle, Triangle of Forces, with practical applications.



METALWORK SHOP: HOLBECK DAY TRADES PREPARATORY SCHOOL.



MECHANICAL LABORATORY: HOLBECK DAY TRADES PREPARATORY SCHOOL.



WOODWORK SHOP: WOODHOUSE DAY TRADES PREPARATORY SCHOOL.

Short Lectures are given on the above subjects, and the student, by means of actual experiment in the laboratory, *finds out for himself* the important principles involved.

Technical Drawing.—The care and correct use of Drawing Instruments, the principles of Practical Plane and Solid Geometry, including graphic solution of problems. The method of making dimensioned hand sketches of simple machine or building details from actual examples. The preparation of working drawings, Tracings, and Blue Prints.

Metal Work.—Uses of ordinary Bench Tools. Principles of accurate Measurements and Gauging. The Lathe, Drilling, Punching, and Shearing Machines. The Forge, Soldering and Brazing.

Practical Examples involving Filing, Fitting, Screwing, Drilling, Turning, Soldering, &c.

Lessons on the physical properties of Metals, Cast-Iron, Wrought-Iron, Steel, Brass, and other alloys. Hardening and Tempering, Case-hardening. Workshop Processes.

Woodwork.—The use of the ordinary Wood-working Tools, the Wood-turning Lathe and its accessories, useful Joints in Woodwork. The Elements of Pattern-making, simple Patterns, Core Prints, Core Boxes, &c.

English and Geography.—Reading and Spelling. Correct use and meaning of Technical Terms. Clear Expression of Simple Ideas. Lecture and Laboratory Notes, Essays, Letter writing. Industry and Trade Materials used in Construction, where obtained, general Distribution, &c.

Drill.—Physical Exercises, Dumb-bell and Bar-bell Drill, Swimming, &c.

The attention of Parents and Guardians is called to the following points:—

(1) 90% of the boys who have completed the 2 years' course at this school have entered skilled occupations either as draftsmen, mechanical or electrical engineers, or some branch of the building trades.

(2) An undertaking is required on admission that a student shall not be withdrawn within one year except with the consent of the Committee.

(3) Regular and punctual attendance is essential. In case of lateness or absence a note of explanation is expected from the parent.

(4) Home lessons of about one hour's duration will be set regularly, and it it expected that these will be carefully and systematically prepared.

(5) The Head Master may be consulted at any time during school hours, or by appointment.

(6) The Fee is 7s. per term payable in advance.

(7) All necessary books, apparatus, stationery, tools, etc., are supplied free of charge.

SECTION 5: TECHNICAL EVENING SCHOOLS.

The organization of Evening work in Leeds follows five main lines:—

I. Technical and Technological Education and Training.

II. Commercial Education and Training.

III. Art Instruction and Training.

IV. Domestic Arts Education and Training.

V. Training Courses for Teachers of all grades.

Technical and Technological Education and Training.

The evening work has been co-ordinated and systematized. It follows a continuous line from the general Evening Schools, through the Branch Artisan Schools and the minor Mechanics' Institutes, to the Advanced Technical Schools,

situated in the Centre, South, and West of the City, and ends in the University of Leeds, thus:—

Grade I.—General Evening Schools (Preparatory Courses).

Grade II.—Holbeck Mechanics' Institute, Hunslet Mechanics' Institute, Woodhouse Mechanics' Institute, Wortley Working Men's Institute, (Elementary and Intermediate Courses). Branch Artisan Schools (Elementary Courses).

Grade III.—Central Technical School (The Leeds Institute), Cockburn Technical School, West Leeds Technical School (Advanced and Honours Courses).

Grade IV.—The University of Leeds (Special Lecture and Honours Courses).

The scheme of evening work provides complete courses of instruction and training for persons engaged in,—

(1) Engineering Trades.
  (*a*) Mechanical Engineering.
  (*b*) Electrical Engineering.
(2) Electrical Industries.
(3) Building Trades.
(4) Sanitary Work.
(5) Leather and Boot Trades.
(6) Clothing Trades.
(7) Chemical Industries.
(8) Bread Making and Confectionery.
(9) Mining.
(10) Textile Industries (Woollen, Worsted, Linen, &c.).
(11) Printing.

The courses of study in all branches are of a practical character, and the instruction is in charge of experienced teachers specially qualified in their respective subjects.

Grade I.—General Evening Schools.

Preparatory sections for youths and men are attached to the various Branch Artisan Schools where necessary.

The General Evening Schools meet three times weekly, from 7.30 to 9.30 p.m.

The course of instruction in the Preparatory Schools is specially arranged to prepare pupils later to take up with advantage one of the various trade courses provided in the Branch Artisan Schools or in the Central Technical Institutes. It gives a thorough grounding in fundamental subjects:—English, Mathematics, Hand Sketching and Instrumental Drawing, Woodwork, or Wood-carving, including Clay-modelling—without which it is useless for pupils to attempt any of the trade courses.

A higher fee is charged a pupil who does not take a grouped course.

Grade II.—Branch Artisan Schools.

The course includes Experimental Mathematics, Practical Mathematics, Practical Plane and Solid Geometry and Hand Sketching, English, Mechanical Laboratory work.

Fee for course, 50c.; higher for those not taking group course.

Grade III.—Advanced Technical Evening Schools.

At the Advanced Technical Evening Schools, courses of instruction have been arranged for persons engaged in:—

(i.) Engineering Trades—
  (*a*) Mechanical Engineers.
  (*b*) Electrical Engineers.
  (*c*) Motor-car Engineers.
(ii.) Electrical Industries—
  (*a*) Wiremen and Linemen.
  (*b*) Post Office and Telephone Clerks.
(iii.) Building Trades and Professions—
  (*a*) Carpenters and Joiners.
  (*b*) Bricklayers and Masons.
  (*c*) Plumbers.
  (*d*) Surveyors.
  (*e*) Architects.
(iv.) Sanitary Work—
  (*a*) Inspectors of Nuisances.
  (*b*) Women Health Visitors.
(v.) Leather and Boot Trades—
  (*a*) Boot and Shoe Manufacture.
  (*b*) Leather Manufacture.
(vi.) Clothing Trades—
  (*a*) Tailors' Cutting.
  (*b*) Practical Tailoring.
(vii.) Chemical and related Trades—
  (*a*) Chemists:—Works Chemists, Analytical Chemists, Pharmaceutical Chemists.
  (*b*) Bakers and Confectioners.
  (*c*) Photographers and Process Workers.
  (*d*) Oil and Soap Workers.
  (*e*) Gasworks Employees.
  (*f*) Metallurgists, Iron and Steel Workers.
(viii.) Textile Trades.
(ix.) Printing.
(x.) Farriery.

Courses are provided also in Botany, Geology, Physiology, Hygiene, &c.

Grade IV.—The University of Leeds.

Special courses for advanced students in Mechanical and Electrical Engineering, Leather Manufacture, Mining, Textile Industries and Dyeing. An attendance of six hours a week throughout the session is required, unless for special causes.

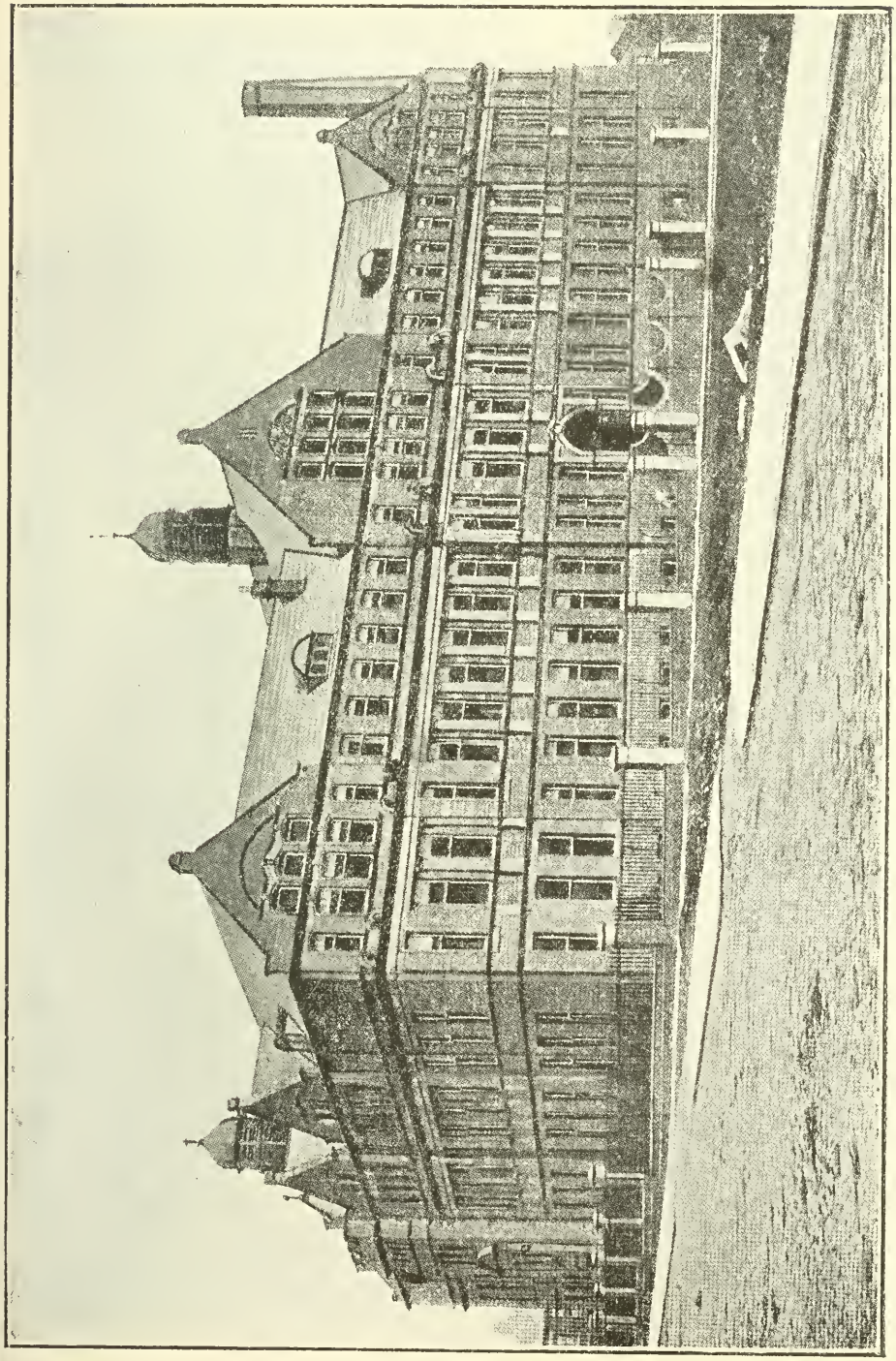
Fee $2.50 for each group course.

Commercial Education and Training.

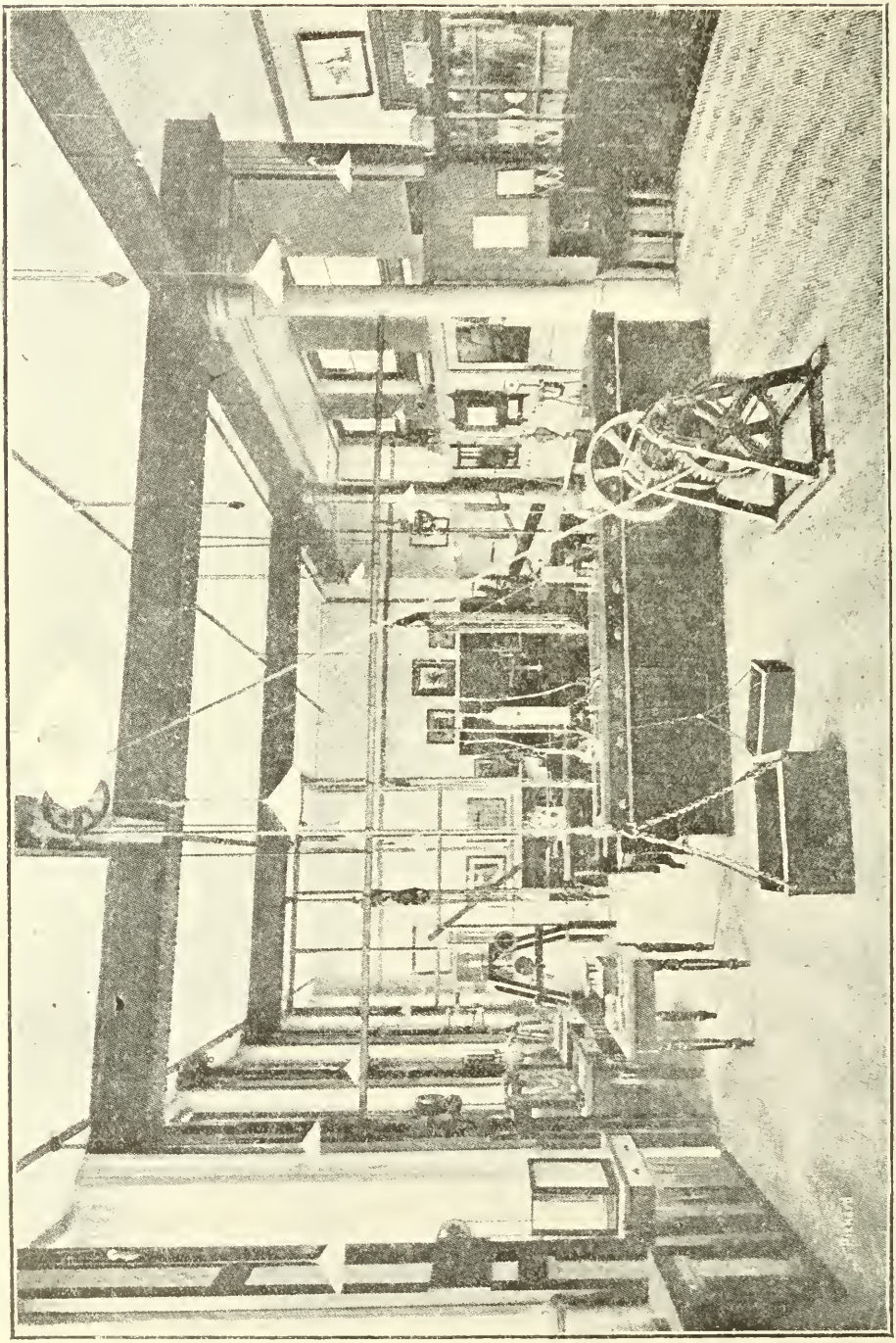
The work in commercial education and training has been co-ordinated and systematized. It follows a continuous line from the General Evening Schools, through the Branch Commercial Schools, to the Advanced Schools of Commerce, and ends in the University of Leeds, thus:—

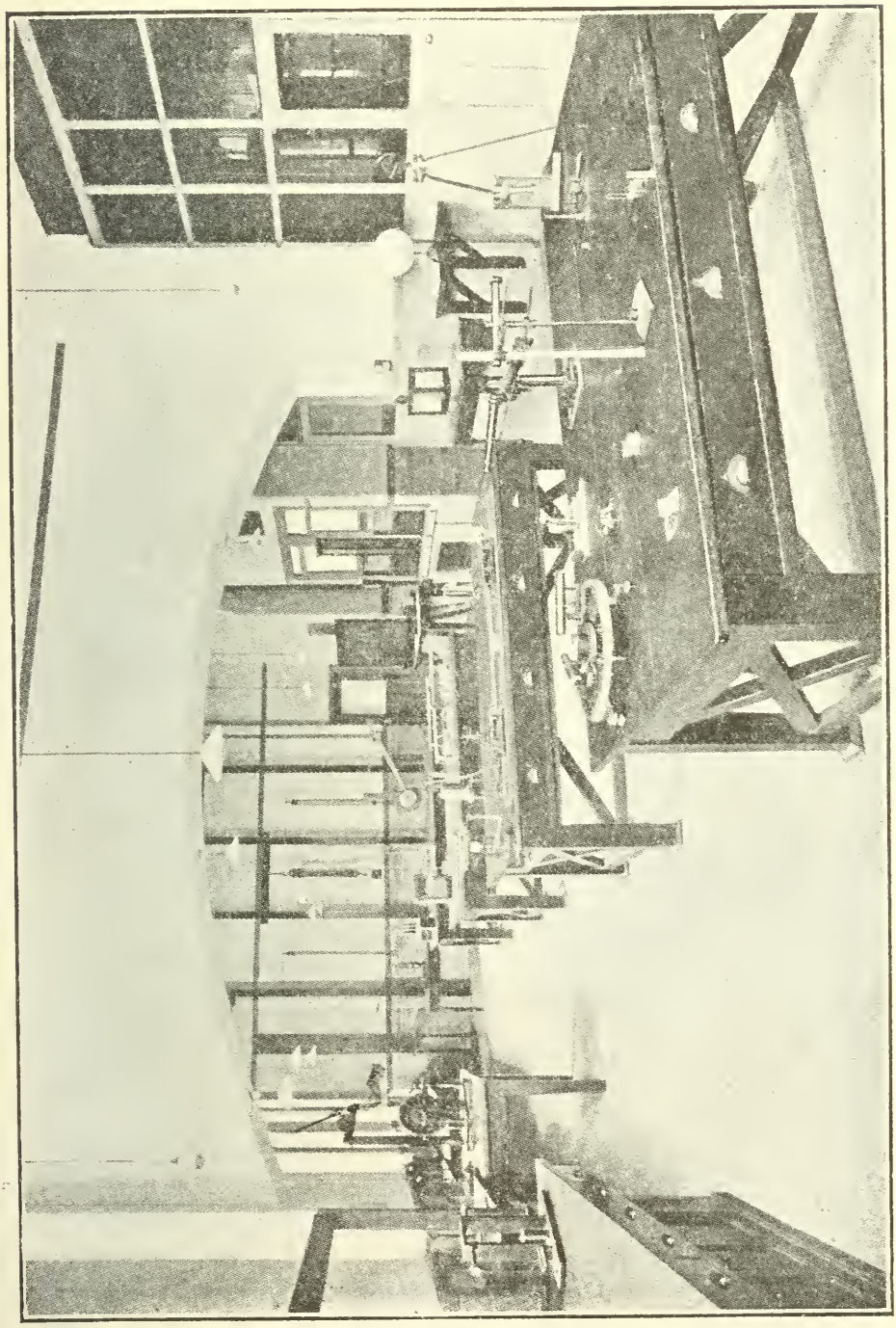
Grade I.—General Evening Schools (Preparatory Courses).

Grade II.—Branch Commercial Schools (Elementary and Intermediate Courses).

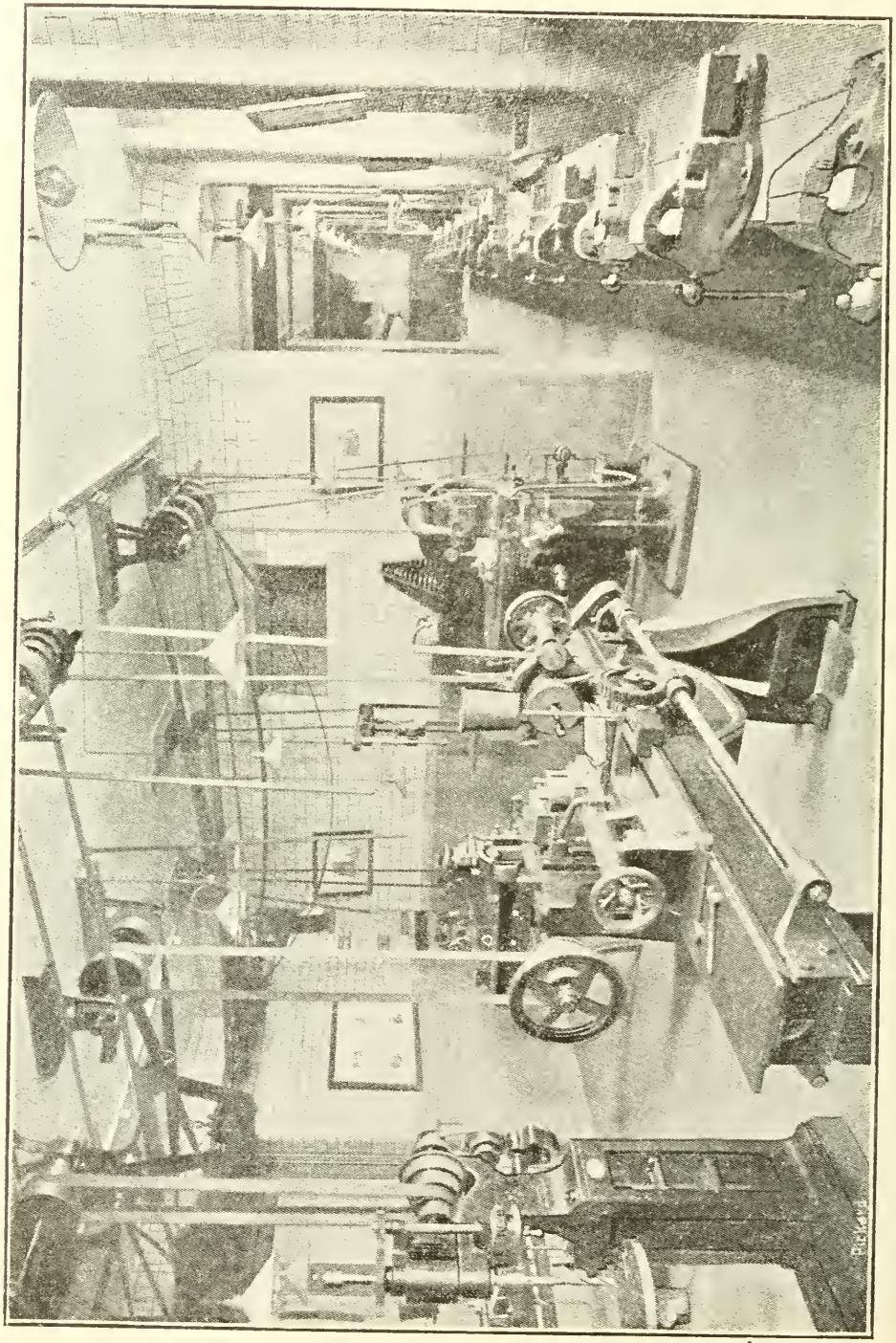


COCKBURN HIGH SCHOOL: LEEDS.





COCKBURN HIGH SCHOOL: ELEMENTARY PHYSICAL LABORATORY.



COCKBURN HIGH SCHOOL: ENGINEERING WORKSHOP.

Grade III.—Central School of Commerce (Central High School), Cockburn School of Commerce (Cockburn High School), Western School of Commerce (West Leeds High School), Intermediate, Advanced, and Honours Courses.

Grade IV.—The University of Leeds (Special Lecture Courses).

In the comprehensive scheme of commercial education for the City, opportunities are provided for young persons who intend to follow a commercial career to obtain a complete and intelligent knowledge of all branches of commercial practice and to secure such training as will fit them for the highest positions in the commercial world.

The courses of study are of a thoroughly practical character, and in schools of all grades specially qualified teachers have been appointed to take charge of the instruction.

SCHEME OF EVENING TECHNICAL COURSES IN COMMERCE.

Preparatory.	*Elementary.*	*Intermediate.*	*Advanced.*	*Honours.*
1. English and Precis.	1. English.	1. Commercial Arithmetic.	1. Commercial Practice and accompanying Arithmetic.	1. Accountancy and Commercial Practice, Importing and Exporting under various conditions.
2. Handwriting Figuring.	2. Commercial Arithmetic.	2. Commercial Practice.		
3. Arithmetic and Mensuration.	3. Commercial Practice.	3. Book-keeping	2. Advanced Book-keeping.	2. Banking and Currency.
4. Geography and History.	4. Commercial Geography.	4. Commercial Geography and History	3. Banking and Currency.	3. Commercial Economics.
5. Drawing.	5. Shorthand.	5. English and Shorthand (with Typewriting) or Foreign Language.	4. Commercial History and Economics.	4. Commercial Law.
			5. Foreign Language.	5. Foreign Language or Shorthand and Typewriting.

There are courses for Municipal Officers, Bankers, Grocers and Provision dealers, also lectures on Citizenship.

Art Instruction and Training.

This section is dealt with under Chapter XI on Drawing, Design and Art.

Domestic Arts.

The work as a whole has been co-ordinated and correlated. It follows a continuous line from the General Evening Schools for girls, through the Branch Young Women's Institutes, to the Central Institute for girls and women.

The group courses aim at imparting a thoroughly useful knowledge of domestic and general subjects. The various schools are provided with well-

equipped Cookery rooms, Needlework and Dressmaking rooms, Starching and Ironing rooms, Laundry, etc.

Students in Dressmaking and Millinery should usually have received prior instruction in Plain Needlework.

Students must provide their own materials for Plain and Art Needlework, Dressmaking and Millinery classes, subject in each case to approval of teacher. Students taking Needlework and Dressmaking are strongly advised to attend a special Course in Art as applied to Needlework and Dressmaking. Students taking Cookery might with great advantage enter for a Course in Elementary Science in preparation for or in conjunction with a Course in Hygiene and Home Management.

As an alternative, but one considered likely to be less effective, the full course may be organised in two divisions; — (*a*) Hygiene and Home Management, Household Accounts, Cookery and Laundry; (*b*) Drawing and Design, Needlework, Dressmaking, and Millinery. A student should in this case devote at least two years to the work of one division before passing to the other. In Division (*a*) Hygiene and Home Management and Household Accounts should be taken for the first two years, generally with only one of the subjects,Cookery or Laundry; in Division (*b*) Needlework, and Drawing and Design should be taken for two years with one of the subjects Dressmaking or Millinery.

At the Central Institute there is an excellent series of class-rooms and specially equipped workrooms for Needlework, Dressmaking, Millinery, Cookery, and Science work in connection with the Domestic Arts. A staff of specialists and highly qualified assistants has charge of the classes. The fee per session for each class is $2,50, or $3,75 if two subjects are taken.

SECTION 6: TRAINING COURSES FOR TEACHERS.

The City of Leeds has provided a Training College through which to obtain a supply of thoroughly trained teachers for its schools. A few facts regarding this College are stated to illustrate the character of the provision being made.

The College is for men and women who intend to become teachers in Public Elementary Schools, and is conducted under the regulations of the Board of Education (London) for the Training of Teachers for Elementary Schools (two years course). The Governing Body of the College is a Sub-Committee of the Leeds Education Committee.

A fine old estate containing an elegant manor-house was purchased, and subsequently additional land for playing fields was obtained, making the total extent of the Training College estate now over 90 acres. There is a fine garden for Nature Study, Gardening, Fruit Culture and Botany, and also good kitchen gardens. The estate is on rock covered with a few feet of good soil, and contains a good water supply within its boundaries. It is easily approached from the University and the Leeds School of Art, from the markets, and from schools of all types.

One of the most pleasant features of the site is the extensive woods through which walks ramify in various directions. Trees are scattered about the estate, and provide ample shade for outdoor reading in summer time.

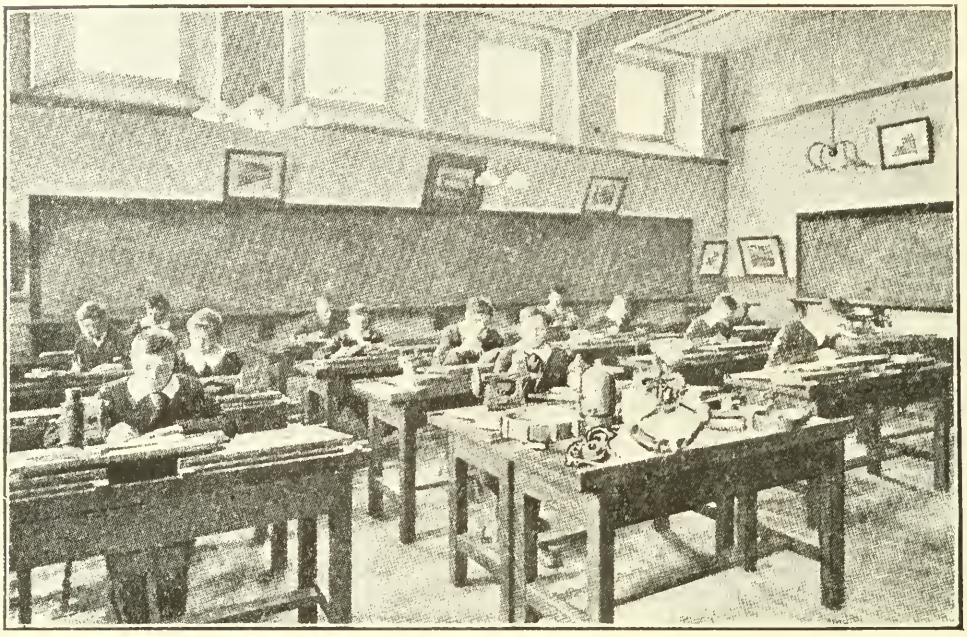
The new buildings, which were in progress of construction at the time of the visit of the Commission, consist of an Educational Block, together with 8 Halls of Residence—3 for men and 5 for women; and provide accommodation for 480 students— 180 men and 300 women. There are in addition a Sanatorium, Swimming Bath, Laundry, and Games Pavilions.

The Halls of Residence are arranged in order to stimulate as far as possible the home feeling rather than the institutional feeling. Each student is provided with a study bedroom, so furnished that during the day it has the appearance of a sitting room. In addition to these private rooms, each Hall possesses its Library, Dining Room and Common Room. Students therefore have the advantage of privacy in work and also of opportunities of corporate life.

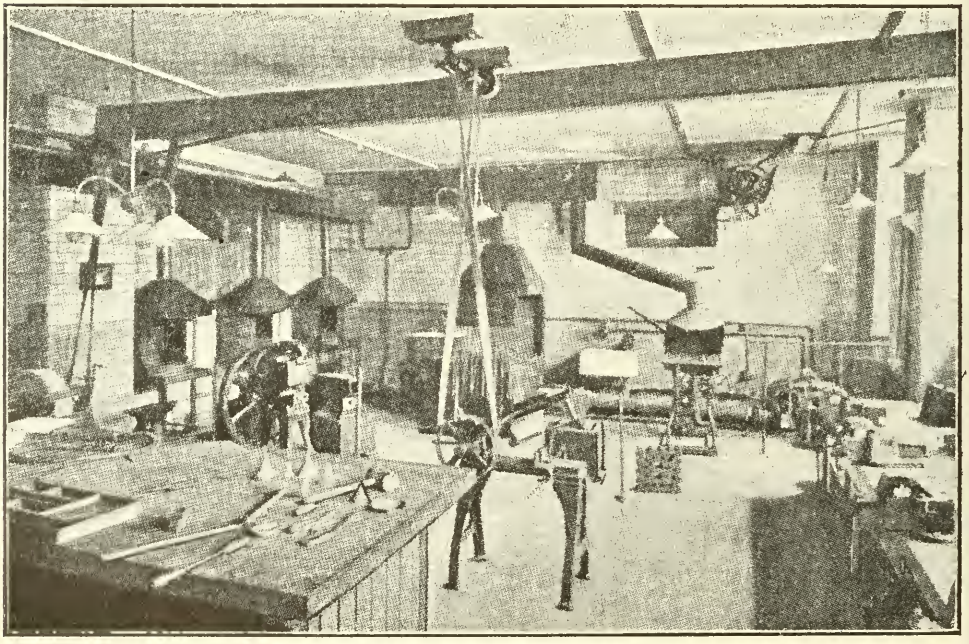
SECTION 7: UNIVERSITY OF LEEDS.

Begun in 1887 in the rising City of Leeds as Yorkshire College, and affiliated to Victoria University, the University of Leeds was, with Owen's College, Manchester and University College, Liverpool, in 1904 converted into an independent University. Its evolution had been gradual, from a Science & Technology School in 1874. Each of these was made into a Faculty. The Faculty of Arts was added in 1877, and Medicine in 1881. It has been a remarkably energetic and successful training school for scientific workers. Its successful application of chemistry to leathermaking and its complete sympathy with the industries of Leeds are well known abroad. It has gained a great reputation also in Textile Industries and Dyeing (Chemical). In its four Faculties,—Arts, Science, Technology and Medicine, it has a staff of 37 professors, 21 lecturers and 62 assistants, totalling 120, who successfully taught in 1908-9 its band of 932 day students, 64 occasional students and 28 post-graduate Students, of whom 378 were taking Pure and Applied Science. Besides these, there are Evening Classes, attended by 233 students from the industries of the City.

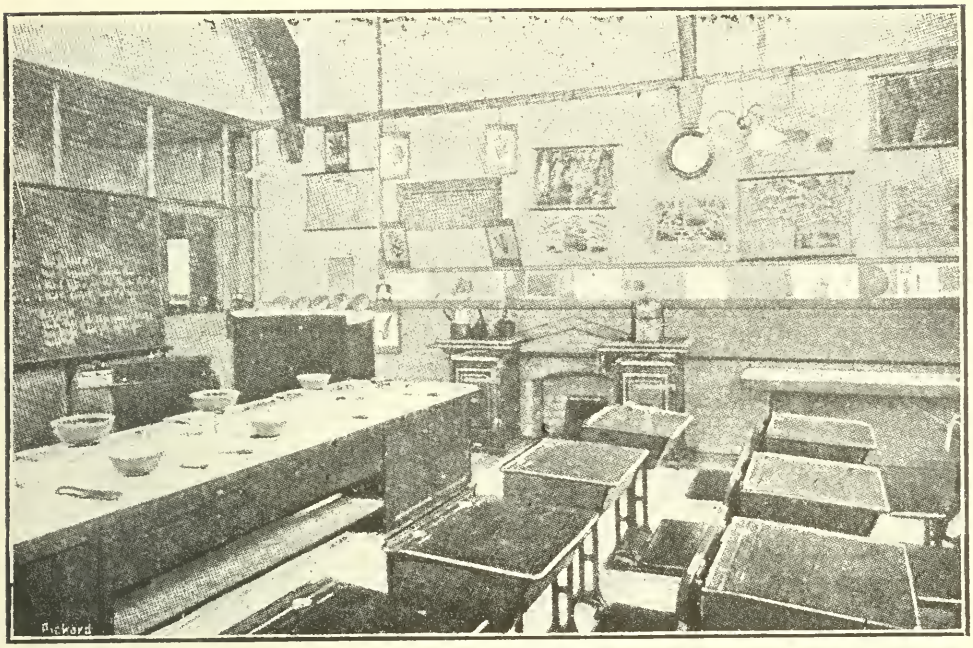
A strong feature of Leeds University is that it has Advisory Committees of leading business and professional men and manufacturers for each of its main Departments. The chief of these Committees are,—Finance, Textile Industries & Dyeing, Mining Engineering, Leather Industries, Elementary & Secondary Training, Coal Gas & Fuel Industries, Higher Commercial Education, Agricultural, University Extension.



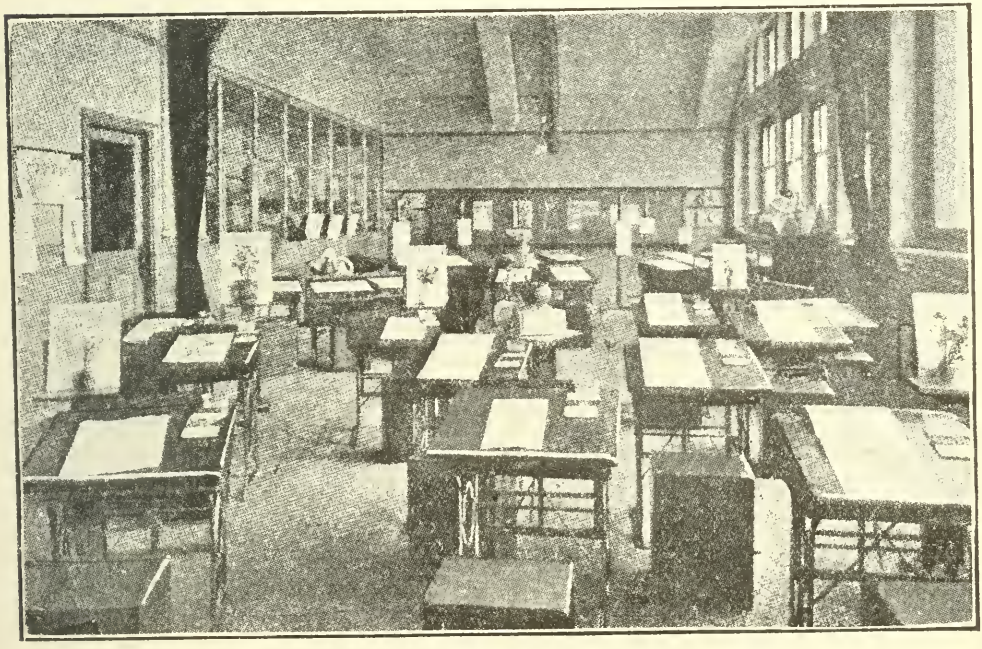
Machine Drawing Room.



Cockburn High School: The Forge.



COOKERY DEMONSTRATION ROOM.



COCKBURN HIGH SCHOOL: ART ROOM.

CHAPTER IX: HALIFAX.

SECTION 1: CONVERSATION WITH DR. J. CROWTHER.

Information obtained in "Conversation" with Dr. J. Crowther, *Principal of the Municipal Technical College.*

Halifax is a city of 100,000 with a variety of industries, chiefly woollen mills, dye works and engine works. A large number of half-timers work in the textile mills in the morning and attend school in the afternoon, or *vice versa*. They are allowed to commence as half-timers at 12, and generally work that way for a year. At 13 they are allowed to discontinue school, provided they have made not less than 350 attendances a year for 5 years consecutively. They are not allowed into the workshops until 14. In the worsted mills there is not a living wage, *i.e.*, 21s. a week, when they attain manhood, for more than one out of eight of the boys who start as half-timers. Others may become overlookers or such, and there are positions where they may earn 30, 35, or 40 shillings; but even at 21s. the employers would be glad to get rid of the men who are doing boys' work. Hence the endeavour must be to guide these boys from the textile mills. That was one of the principal things that led to the establishment of the Preparatory Trade School, where all are prepared for different industries.

When boys leave school, they are visited at their homes and advised to go into the Evening Schools. Every week the City Education Office sends to the Technical College the names of all pupils leaving school that week. A clerk is detailed to visit each boy's home, taking a syllabus of the Evening School and explaining what is done there, and the benefit of it to any vocation in which the boys are engaged. In some occupations, such as a greengrocery, the boy's tendency is to sever his connection with education altogether, because he works at night.

65 Per Cent of Boys Join Evening Classes.

In Halifax there are 70 or 80 solicitors who have office boys simply for opening doors, stamping envelopes and posting letters, and when those boys reach 16 or 17 there is nothing suitable for them. This College therefore tries to get hold of these lads and to find them suitable positions, and if possible guide them into them. By personal visits to pupils leaving school a fairly large percentage of them are got into Evening Classes. The clerks who visit these students have had experience of going through the classes themselves, and they can usually handle all cases, but when anything exceptional arises the Principal makes a personal visit.

When positions are obtained for boys in that way, they go to Evening Class, not to Day School. The clerks who visit the homes go through the preparation of examination papers, seeing to the questions, answers, etc. When the clerk visits the young people, he cannot promise them places but can simply say what has happened to others.

A feature about the Evening Schools is that without exception the vocational commercial teachers started in the Evening School as students. They are clerks in offices who, having gone through the commercial course in the College, have come back as teachers. The same remark applies to dressmaking and millinery.

These classes are practically free, as the fee is returned on the pupil making 90% of possible attendances. It is difficult to find such attendances and such homework in any other place in England. About 65% of those who leave Day School attend Evening Classes. A special effort was made to ascertain what was possible in that matter, and it was found that 15% could not stand the pace; another 15% were undesirables, who might have been defective in Day Schools, or have had other illnesses. At one particular period a big effort was made, and over 80% were got into the schools, including boys and girls. The big transition from the Day School, of five and a half hours per day and no homework, to 50 hours per week in the mill is to be considered.

Co-operation of Employers.

Employers will help very much so long as the plan does not touch their pockets, some being very enthusiastic about the College and always praising it sky-high; but if it costs them two or three shillings a week, that is different. There is not the same necessity for canvassing employers in Halifax as in most towns, because the Educational Authorities keep in close touch with the students from the time they leave school. In all the textile mills and engineering shops the school has a big poster outlining the classes at the beginning of each session. The Chamber of Commerce gives prizes, and this has a very beneficial effect on the pupils, because it represents the employers of the town. Each year the Chamber awards 4 gold and silver medals, 8 bronze medals, and about £20 in money prizes, and there is invariably a large number of employers present at the prize distribution. The engineering employers, through their Federation, offer prizes and medals and money each year to the most successful students in the Engineering Section.

The house painters take a very deep interest and supervise the work, adjudicating upon it, etc. They used to give prizes, but there was a disagreement with the School, as the painters wanted to award prizes on what the School considered the purely mechanical side, as apart from the artistic, and to make their prizes dependent upon marbling and graining —purely mechanical arts— and time tests, while the School wanted a more artistic course whereby the students would go into such work with a tendency towards a general uplift. The painters therefore continued to do their work, but were relieved from giving the prizes.

Employers allow the school representatives to go into the works and distribute circulars during working hours. There is no place in Halifax into which

the Principal could not go at any moment and speak to the apprentices, and Mr. Crowther did not think there would be any objection to his taking a class in and showing them around the works. One large engineering firm offers to pay the whole of the fees for their apprentices, and there is no direct opposition on the part of the employers.

Preparation of Apprentices.

Mr. Crowther pointed out that this is not really a trade school at all, but simply leading up to a trade and supplementing shop experience—quite a distinct thing altogether. To him it was an ideal scheme for young boys in a country such as Canada, attempting to develop its industries. In Halifax no attempt is made to teach trades but what is claimed is that after students have left the school they are specially intelligent apprentices. Then the schools meet another purpose, that of the limits of specialization, which is fairly prevalent in England. Indeed in engineering industries apprentices cannot get the training they could in old times. The object of this school is to give them an insight into the various sections of the trade, and when they get into the works, they are sufficiently intelligent to be able to pick up very rapidly. Even if a boy is confined to one job he can soon switch off and get into another.

The Incorporated Chamber of Commerce, representing general, textile and engineering employers, passed a resolution strongly in favour of the establishment and development of Preparatory Trade Schools, and the Federated Trades & Labour Council also passed a resolution strongly advocating the establishment and development of Preparatory Trade Schools, and that the schools should be maintained largely by funds from the Central Authority. This addendum was put in because these lads after being trained go everywhere. The President of the Local Branch of the Engineering Employers' Federation expressed unqualified approval of the scheme of preparatory training for apprentices, as admirably meeting a requirement in the engineering trade. He believed the scheme would be of greater advantage locally than some of the higher branches of training, because practically all the youths trained under this scheme can find employment in their own town, as against a very small percentage with the higher and more purely scientific training.

Objections to Compulsory Attendance.

In Halifax the percentage of pupils between 14 and 16 is higher than in Germany, where attendance is compulsory. If small employers in engineering allowed an apprentice to attend in the day time, the machinery would stand still, because apprentices cannot be duplicated and idle time avoided, as in large concerns. Another difficulty in regard to compulsory attendance is to determine in which branch of industry the apprentice must attend. A plumber with one apprentice would be much more severely hit, because when he goes out on a job, he must take his apprentice with him; that is one of the regulations of the trade. One such plumber in the neighbourhood of Halifax is

over three miles from the nearest tram; suppose his apprentice is compelled to attend, where is he to go? That is where compulsory attendance would break down; and if these difficulties arise in a County Borough, what must it be in a County area? Then there are a number of seasonal industries, such as housepainting, very busy in summer and very slack in winter. Housepainters let their apprentices come to school in winter for two hours a week without any reduction of wages, because the conditions of the trade favour that; but other industries are busiest in the winter; so that it would be difficult to put compulsory attendance into operation. Lastly, although they might be compelled to come to schools, they could not be compelled to take instruction or benefit by it.

Mr. Crowther differentiated between compulsory education before and after 14, because beyond 14 the student is no longer a child. His opinion was that before many years, England would have compulsory attendance for night schools, but he was against it, he and Mr. Reynolds, of Manchester, being the two great opponents of compulsion; and he would leave no stone unturned to prevent it. "Other countries have compulsory attendance, yet cannot equal what we are doing here in the way of attendance. You can persuade the pupils to come if you take the trouble, but if you are going to sit in the office and simply send out a circular or postal card and let it end there, eliminating the personal equation altogether, then there is no sympathy. On the other hand, if you can get at the boy, you can do a lot of good, not only for his industrial and technical education, but also so far as the moral side of life is concerned."

Better to put Compulsion on Employers.

Dr. Crowther thought the schools and institutions would have everything to gain by an arrangement requiring employers to give apprentices between 14 and 17 free time from shop work for four to six hours per week, this time to be used in any way the authorities considered advantageous for the boys' development. He did not think there was so much as people make out in the argument about boys being worn out after working hard all day. The difficulty would be to put into practice the plan of taking stated hours. He would prefer taking the time in the morning, even if it came as early as six o'clock. As to the effect of study upon the boys, he said that the classes began in September, and in Halifax in winter time it was dark before six o'clock; there was nothing in town but the music-hall; what was a boy to do? If he had been working a machine all day he was physically tired, but not mentally tired, and the change from the physical shop work to the mental side would be beneficial. Besides, if the boys were not in school, they were at the street corners. If a number of leading employers got into the way of allowing the time off to the boys, it might lead to legal compulsion and that might make it more acceptable. It would be easier to put compulsion on the employer to allow the boy so much time than on the boy to attend, but of course the two would have to go hand in hand. He thought the only drawback about the shop school was its tendency to become too shoppy.

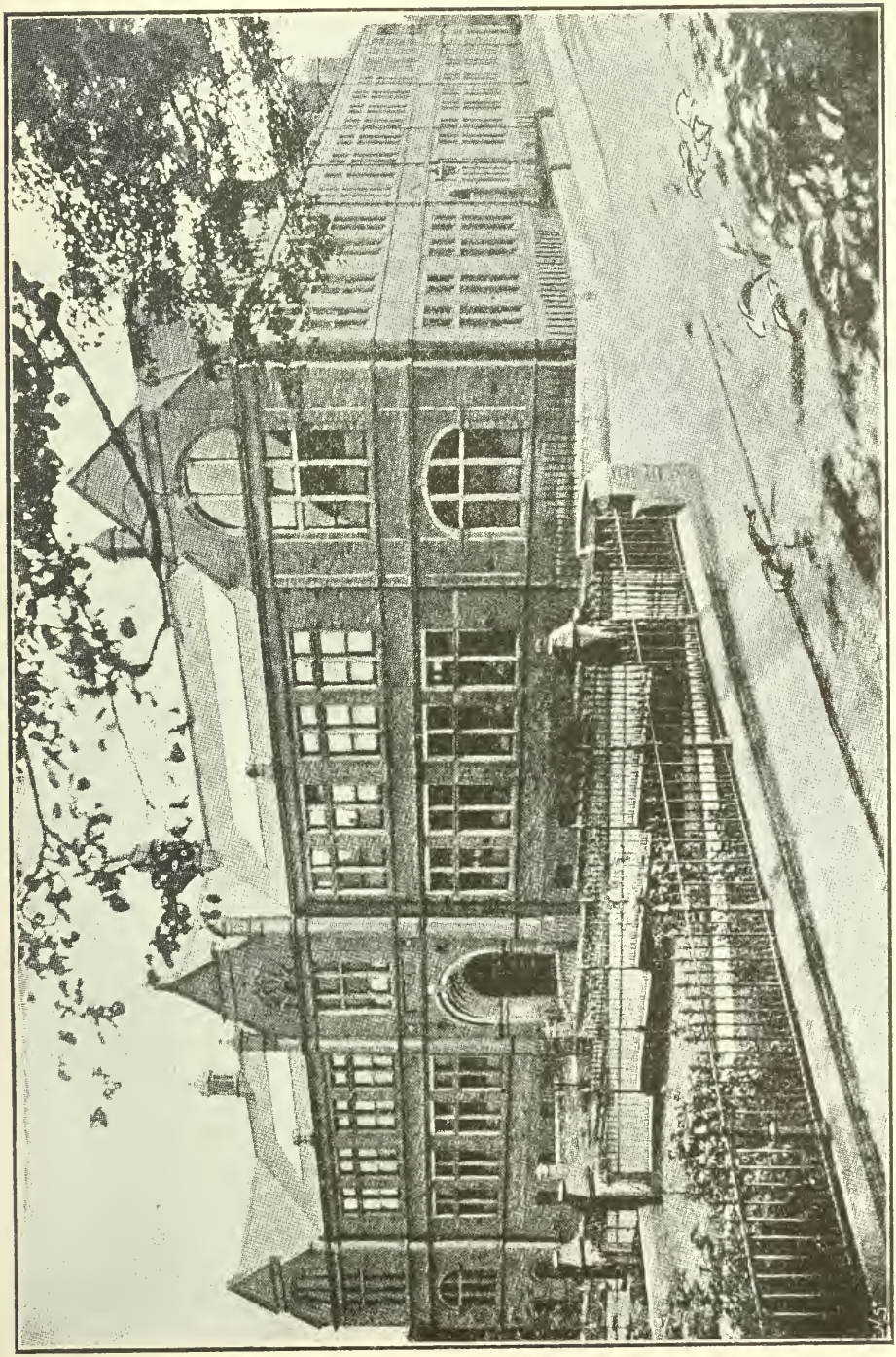
There are no definite instances of employers in Halifax who are increasing apprentices' wages on the ground of their attending night school, as compared with those who do not go, but those who attend get positions in shops over those who do not, because employers recognize that they are more intelligent in the shops than the other class. Many of the most important industries in Halifax are either managed by ex-students of the College, or positions next to the highest are held by such ex-students, and of course that kind of thing is bound to help.

Dr. Crowther referred to the desirability of Elementary School work teaching children to observe and do things, so as to increase the avenues of intake and thus prepare for greater enjoyment of life. In the technical classes practically the whole curriculum is concrete. Observation is trained straight away; history is life-history, geography is almost entirely commercial; and in experimental science work there is observation all the time; a broader mental basis of activity is being given continually.

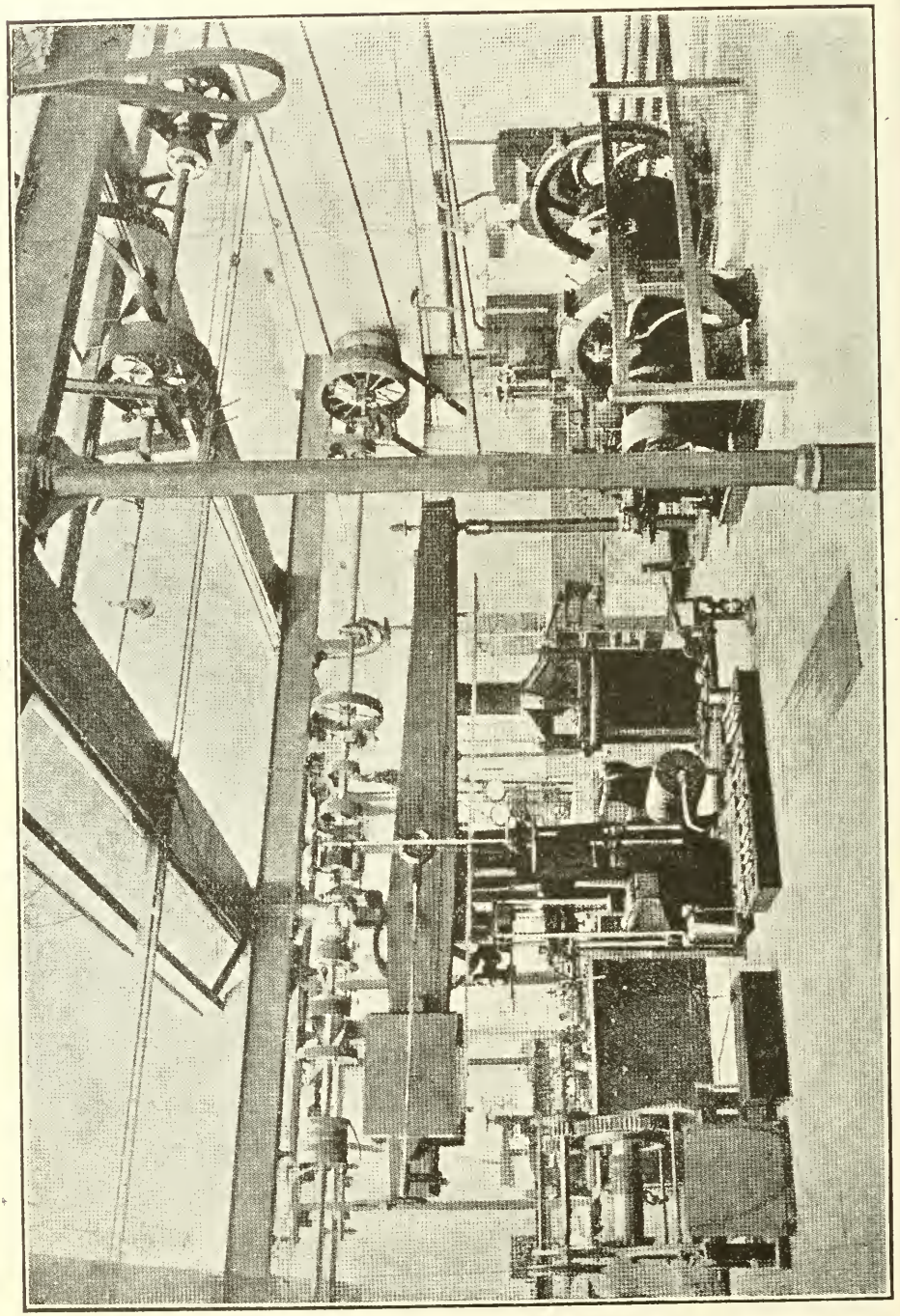
SECTION 2: MUNICIPAL TECHNICAL COLLEGE.

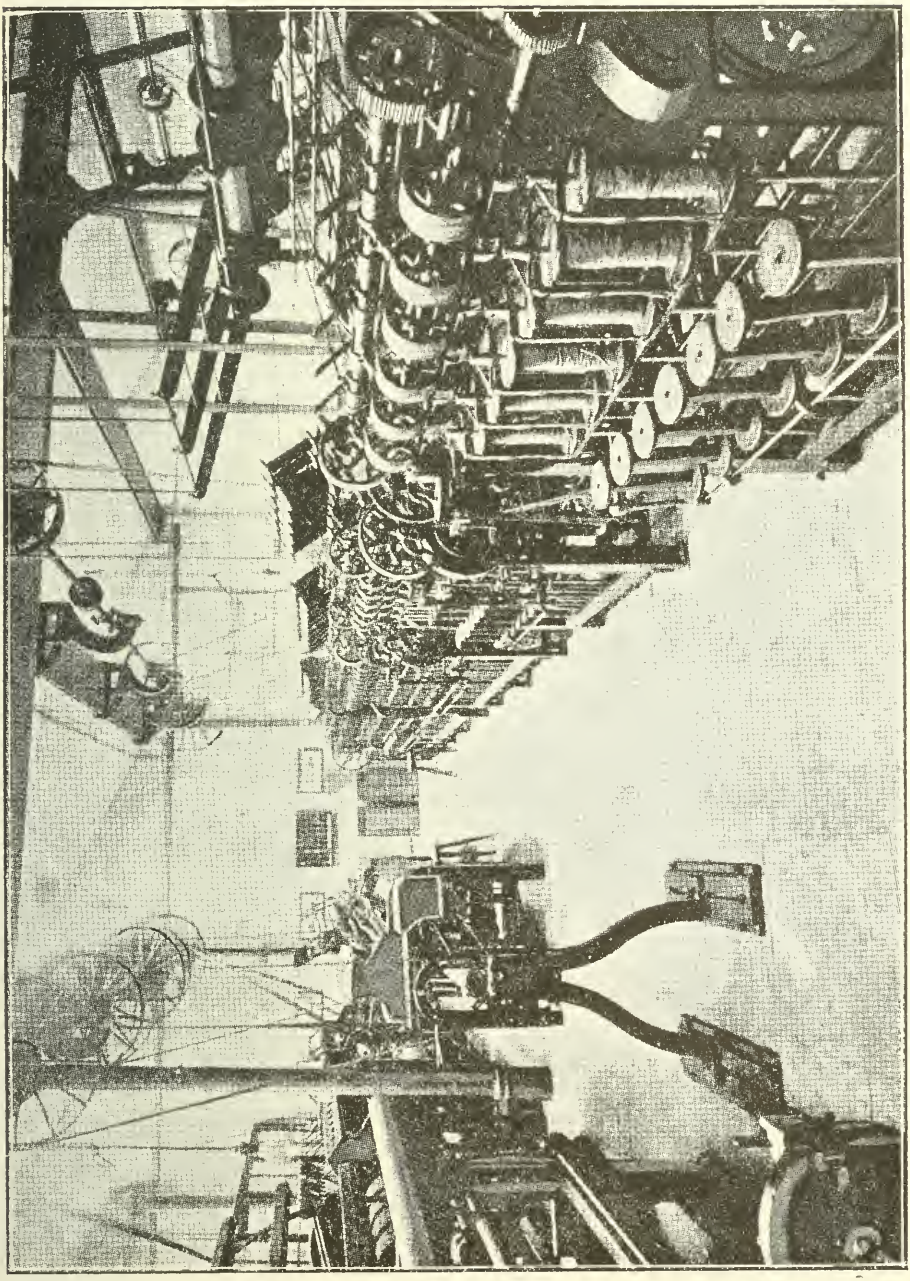
This college costs about £9,000 per annum. The Board of Education (London) grants about £3,000. The College covers the whole field of industrial life from Elementary Schools upwards. Dr. Crowther is strong on the industrial and civic advantages gained through the improvement of the individual. The industrial improvement is very marked through the graduates of the Evening Technical Schools and Colleges being in positions of authority and in charge of works. The teachers are thoroughly competent and experienced in the particular trades, most of them, if not all, having been trained through the Halifax evening classes. One teacher in the evening class was given three guineas per night. He was worth it because he could handle large classes, so that the Imperial Grant on student hours covered the whole cost. The remuneration to evening teachers, according to supply and demand, varied in the same subject from year to year, the usual range being from 5 to 10 shillings per lesson.

Students must satisfy the instructor that they were able to profit by the course offered. No restriction is made in evening classes as to men following trades in the day time. Medals and scholarships and prizes are offered. Cases of students who have been very successful are cited for the emulation of pupils. Students have the personal assistance of the Principal to get out of blind-alley occupations. The teachers are most earnest and enthusiastic men. For example Mr. Turner, the weaver, has had 17 years experience. The earnestness and keenness of students in their work is very noticeable; discipline takes care of itself. The physique of the students is excellent in the different classes. Years of attendance in the technical classes count in cutting off years of apprenticeship. There has been a decided improvement in the cloth trade by means of the College; also in dyeing and patterns, and in the understanding of the use of factory machinery by those who were trained. A number of inventions have been perfected and patented by graduates of the school. Improvements have been effected in the output of the machines by differences in the management of the machine and by the use of common machines for making an uncommon product.

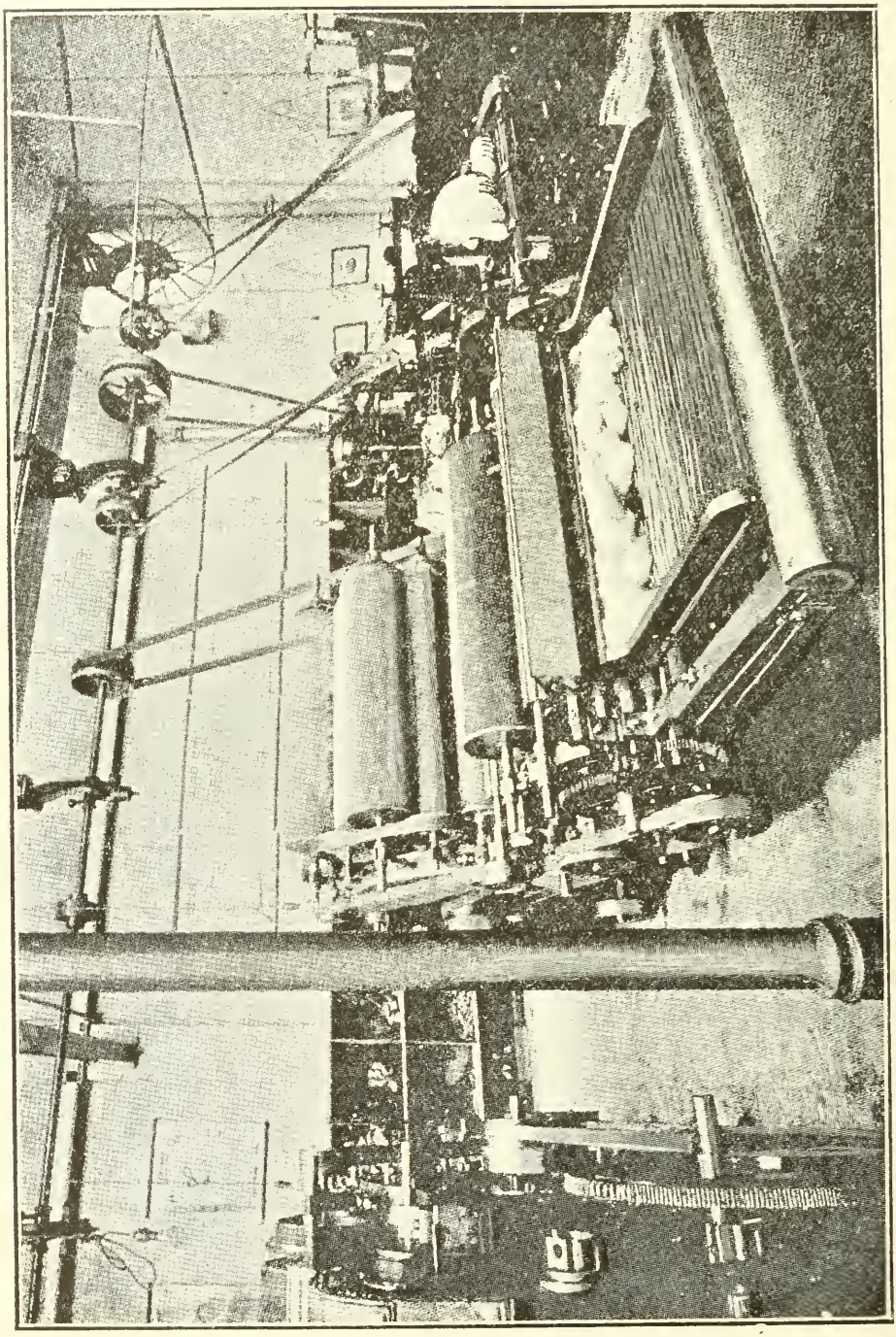


County Borough of Halifax: Municipal Technical College.





CENTRAL PORTION OF THE SPINNING SHED: MUNICIPAL TECHNICAL COLLEGE, HALIFAX.



Corner of the Spinning Shed, Municipal Technical College Halifax

There has been a change in the attitude of the people towards education They now appreciate this training and are willing to support it.

Science and Technology.

The following courses are given:—

1. Mechanical and Civil Engineering.
2. Electrical Engineering.
3. Motor Car Engineering.
4. Textile Industries.
5. Pure and Applied Chemistry.
6. Courses for University (Science and Engineering) Degrees.
7. Cabinet Making.
8. Topography.
9. Domestic Subjects.

Textile Industries.

Some details of this Department are given. The provisions in the other Departments are equally complete.

Worsted Spinning.—Weaving and Designing.

The course of instruction in Wool and Worsted Spinning and Weaving and Designing extends over 3 years.

The courses are designed to meet the requirements of those to whom a knowledge of the theory and practice of wool and worsted spinning and weaving and designing will be of practical utility, whether as designers, overlookers, managers, or merchants. The instruction is thus of special value to those intended for or engaged in:—

(1) The spinning of yarns and the designing for, and manufacture of, woven fabrics.

(2) The buying and selling of yarns and woven fabrics.

(3) The manufacture or export of textile machinery.

The equipment consists of a whole range of worsted spinning machinery, appliances for yarn testing, hand and power looms, also diagrams and lantern slides for the satisfactory illustration of the courses of lectures.

Practical Spinning Course.

The practical course in spinning consists of exercises in adjusting, setting, timing and working the various machines, and in sampling, mixing, and testing the several varieties of wool, slivers, rovings, yarns, and twists, and also in making complete drawings of the machines and their parts.

Weaving and Designing.

Designing.—The principles of cloth construction, including the consideration of plain and twilled cloths; also modifications of plain cloths.

Sateens and the derivations of new weaves from the sateen.

Twills, etc., formed by the combination of two or more weaves; sateen, re-arrangement of twills, etc. The production of elongated and fancy twills.

Stripes and check designs, and drafting to weave on the lowest number of healds, and pegging plan of the same.

Application of the principles demonstrated in the foregoing to dress fabrics, such as cashmeres, lustres, silks, etc., worsted and woollen trouserings, coatings, overcoatings, and mantle cloths.

Calculations.—The principles of counting yarns in worsted, woollen, cotton and silks. Finding the weight of warp and weft, and the cost of producing simple fabrics. The principle of counting the sett for local and other districts.

Loom.—The hand loom, its construction and various movements; elementary principles of power loom weaving.

Pattern Analysis.

Analysis of weave, including twills, ribs, sateens, corkscrews, stripes, checks, drafted patterns, and weave combinations.

Materials. Microscopic analysis of cloths, yarns, rovings, and fibres. Chemical tests. Testing for strength, elasticity, twist and evenness.

Various methods of ascertaining the weight per yard of cloths, and counts of warp and weft. Determination of warp and weft of the cloth.

Methods of finding sett and picks, also allowance for shrinkage.

Practical Weaving Course.

The practical course in weaving includes the following branches:—

Drawing-in and twisting. Cording-up and gaiting hand looms. Cording up and gaiting power looms. Tappet setting. Jacquard harness building. Card-cutting for dobbies and Jacquards. Lag pegging for dobbies. Setting and timing the various parts of power looms. Altering looms to weave different kinds of cloth. Weaving.

Day Classes for University Examinations.

These classes cover Matriculation Examinations of London and the Northern Universities, and the Intermediate Examinations, Science and Engineering, of the University of London, also in Mathematics, Physics, Engineering subjects, Chemistry, English, French, German, Book-keeping House Painting and Decora-

ting, Commercial Practice, Shorthand, Typewriting, Dressmaking, Millinery, Needlework, Cookery, Laundry Work, Art.

Evening Classes at the College.

These courses at the College are designed to give systematic training in the principles of Science and Art, as applied to the commerce and industry of Halifax and district, with especial reference to the following departments:—

(1) Commercial Knowledge. (2) Mechanical Engineering. (3) Electrical Engineering. (4) Building Trades. (5) Pure and Applied Chemistry. (6) Textile Industries. (7) Women's Work. (8) Art.

Courses have also been arranged for students desirous of obtaining Certificates of the Institutes of Bankers, Royal Institution of British Architects, Institute of Civil Engineers, the Bachelor of Science Degree, also the Bachelor of Science (Engineering) Degree of the University of London.

The real object of the student is to acquire a sound knowledge of principles and their direct application to his daily work. This can only be attained by a systematic training.

In the courses of study it is assumed that the student possesses a knowledge at least equivalent to the Fourth Form of the Council Secondary School. The Sub-Committee strongly advises those intending students who do not possess this preliminary knowledge to attend the Evening Continuation Schools.

With a view to aid in the systemization, which it is the great object of the College to encourage, the regular 5 or 6 year courses are suggested to young students.

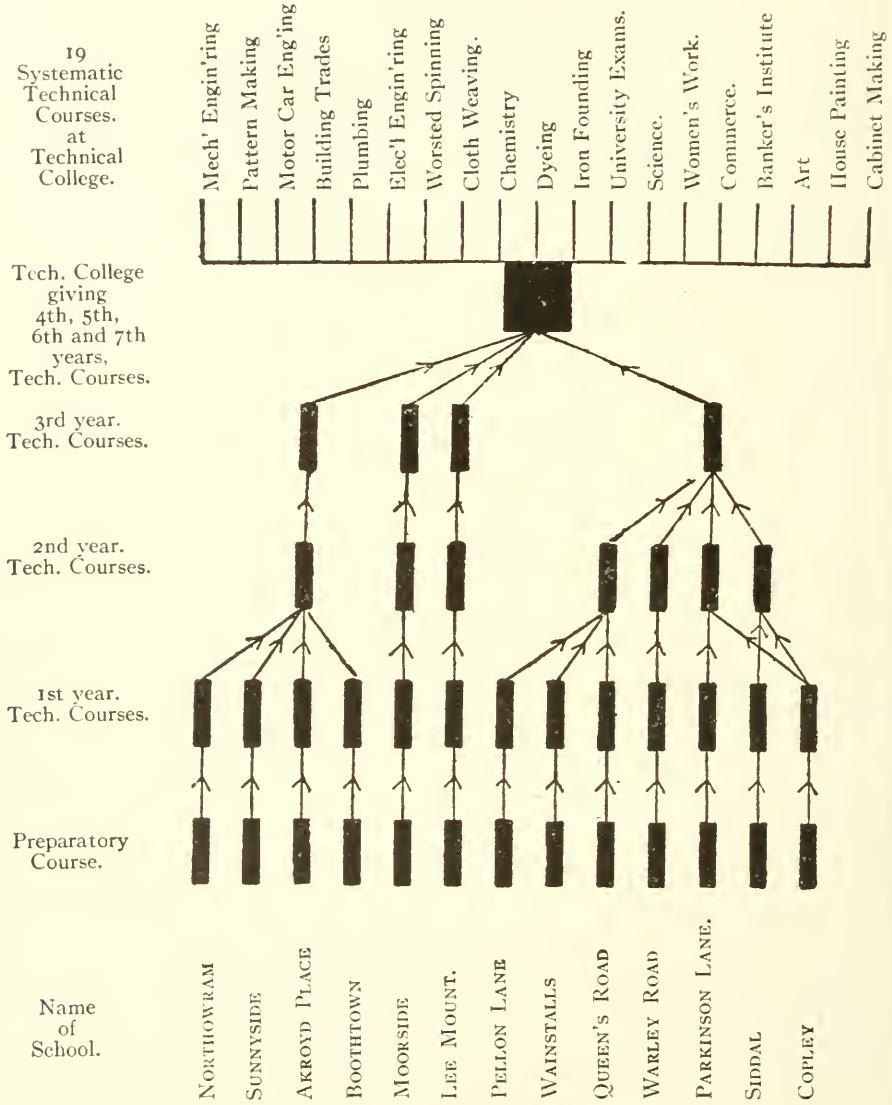
In the Building Trades Department courses are held having an especial bearing on plumbing, house painting and decorating; while in the department of Textile Industries, courses are given in wool and worsted spinning, weaving, etc.

Evening Schools, Co-ordination.

The following diagram illustrates the Co-ordination Scheme. The heavy lines represent schools in which various courses are given (see details on left hand side). The thin lines show how the student passes from one course to another, either wholly in the same school, or partly in one school and partly in another of a higher grade.

Since preparatory courses are arranged in nearly all schools, a scholar who desires to take one of these courses will probably attend the school nearest to his home. After having passed successfully through the preparatory course, he will take one of the first year courses. If this be provided in the school he is already attending, he will continue his studies at that school, but if not, he will proceed to the nearest school of a higher grade indicated in the diagram; *e.g.*, a boy having satisfactorily attended the preparatory course and a first year course at Copley School will proceed to Siddal School for the second year course; similarly, a boy

from Siddal School desirous of taking the third year course will proceed to Akroyd Place or Parkinson Lane School.



Evening Continuation Schools.

The object of these Schools is two-fold,—(1) To continue, by means of carefully graduated courses of instruction, the work of the day school; (2) To afford the necessary preparation to enable students to benefit by the instruction given in the the various departments of Technical College.

The Evening Schools are of four grades, providing, (1) Only a preparatory course; (2) Preparatory course and first year industrial and commercial

courses; (3) Preparatory course and first and second year industrial and commercial courses; (4) Preparatory course, first, second and third year industrial and commercial courses and art courses.

Curricula of Evening Continuation Schools.

COURSE.	SUBJECT.	WEEKLY HOURS.
Preparatory.	Calculations and Drawing	2½
	English	1½
	Workshop Practice	2
First Year Industrial	Practical Mathematics and Drawing	2½
	English	1½
	Workshop Practice or	2
	Practical Physics	2
Second Year Industrial	Practical Mathematics and Technical Drawing	3
	English	1
	Practical Mechanics and Physics	2
Third Year Industrial	Practical Mathematics	2
	Practical Mechanics and Physics	2
	Machine Drawing or Building Construction or Worsted Spinning or Cloth Weaving or Plumbing	2
First Year Commercial	English, Geography and History and Hand-writing	4
	Calculations	2
Second Year Commercial	Book-keeping and Commercial Arithmetic	3
	English	1
	Shorthand and Business Methods or	2
	French	2
Third Year Commercial	Book-keeping, Business Methods and Commercial Arithmetic	4
	Shorthand or French	2

Workshop Practice.

The workshop practice in the Preparatory and First Year Industrial Courses consists of either woodwork or metal work or lead work or wood-carving.

The workshop Courses extend over 3 or more years.

Woodworking.—The Course is intended for boys, who wish to acquire a practical training in the use of woodworking tools, including the construction of simple and useful models which the students have prepared to scale from sketches or from actual measurement. The students have the opportunity, under the supervision and direction of the instructor, of making any desired article, upon payment for materials, provided that the teacher is assured of their ability, and after a satisfactory working scale drawing has been prepared, either in the school or at home. Practical calculations are made by each student on the amount and cost of timber required for each model.

Short lectures are given on woodworking tools; their names, proper uses, correct handling, principles of construction, and the modes of hardening, sharpening and using them.

Also short lectures on timber; its nature, growth, description, qualities, seasoning, uses, etc.; countries and parts from which we receive our supplies, and the forms in which it is brought into the markets.

Leadworking.—The Course includes a series of graduated exercises on marking off and cutting out sheet lead, followed by simple exercises on lead bossing, and bending pipes up to 2-in. in diameter.

Metalworking.—Bench Work.—Use of hammer, chisel, and file in the preparation of flat and other surfaces. The making of keys and keyways for shafts and pulleys. Use of gauges and templets in fitting work. Use of the file and scraper in the preparation of true plane surfaces,

viz., straight edges and surface plates. Use of the compasses, scribing block, square, &c., in marking out work preparatory to its being machined. The use of drifts in finishing square and other shaped holes. Use of taps and dies.

Turning.—Hand lathes. Use of the hand lathe. The different forms of tools required in working upon various metals.

Striking and chasing threads in the hand lathe. Chucking work in the hand lathe. Use of compound slide rests on these lathes. Use of boring tools.

There are Domestic Courses for girls under 16, running for 3 years, the compulsory subjects being English, Needlework and Domestic Science, or Drawing, or Singing; optional subjects, Dressmaking, Millinery, Cookery, Laundry work, Ambulance, Home Nursing and Housewifery.

Special Classes.

Special Classes are arranged for adults, *i.e.*, those of 18 and upwards, at any of the Evening Continuation Schools, provided a sufficient number of students offer themselves for enrolment. The following is a list of the Classes, with number of evenings per week:—*For Men*—Calculations, Reading and Composition, Geography and History, 2; Ambulance, 1. *For Women*—Calculations, Reading and Composition, and Needlework, 2; also 1 each for Making of Children's Clothes, Ambulance, Home Nursing, Cookery, Laundry Work, Dressmaking, Millinery.

Drawing and Art.

The object of this Course is to give, by a system of carefully considered exercises, a thoroughly practical knowledge of the rudiments of Drawing, so as to furnish a useful elementary training to those without previous knowledge of Art.

Those students who desire to make Art a part of their general education, or wish to adopt Art, either pure or applied, as a profession (*e.g.*, Designing), find this Course a most useful preliminary to the instruction given at the Technical College School of Art.

The subjects of instruction are English, Calculations, Freehand, Model, Geometrical Drawing, Light and Shade and Modelling.

SECTION 3: PREPARATORY TRADE SCHOOL.

Object of the School.

To provide a practical course of instruction and thorough preparatory training for boys from 12 to 15 who intend to be apprentices in any of the local trades.

The existing system of education, whilst amply providing for boys intended for commercial occupations, does not altogether meet the needs of those who may wish ultimately to be skilled artisans. In certain industries, owing to the changed conditons of production, the old apprenticeship system has completely

disappeared, and it is now almost impossible for an apprentice to acquire an all-round knowledge of his trade, hence the necessity of widening the educational work to provide a training for those who are to be skilled workmen.

The narrowed training of apprentices may have very disastrous results; (*a*) to the apprentice himself, who, through the introduction of labour-saving machinery into his branch of the trade and his inability, through lack of an all-round training, to adapt himself to some other branch, may be forced into the unskilled labour market; (*b*) to the masters thorough the inadequate supply of well-trained foremen and works managers; (*c*) to the nation, which will be unable to maintain its position in the face of foreign competition unless its artisans are trained to the highest efficiency in industrial work.

The course arranged for this school, though in no sense claiming to teach a trade, is intended to meet, to some extent, the deficiency referred to above. It will give the apprentice a full knowledge of the elementary principles, scientific and artistic, of all departments of his work, and also a practical acquaintance with the tools and machines, etc., used in its various branches; thus the practical training of an Engineer's apprentice will include (*a*) the use of woodworking tools, exercises leading up to wood turning, and the making of simple patterns, (*b*) Metalworking, commencing with the use of the hammer, file and scraper, and later the shaper, planer, lathe, milling machine, etc.; also work at the fitter's bench. Laboratory practice will enable the pupils to determine, experimentally, the various scientific and mechanical principles which the apprentice will meet with in the workshop.

Subjects and Courses of Instruction.

Practical Mathematics, dealing mainly with workshop calculations.

Drawing, including sketching and dimensioning details from machines, buildings, furniture, etc., and making working drawings from the same.

Experimental Science, illustrating the principles of those sciences which bear directly or indirectly upon our trades and industries.

Workshop Practice, giving each pupil an acquaintance with the practical part of his trade and at the same time making him of immediate practical value to his employer.

The courses of instruction extend over 3 years, During the first year all pupils take the same course, in the second the drawing and workshop practice are specialized to some extent acording to the intended trade of the pupils; and in the third this specialization is carried much further.

Requirements for Admission.

Applications are received from candidates not under the age of 12 years on September 1st. They are required to pass an entrance examination Fee, £3 per annum.

Parent or Guardian must undertake that scholar will attend regularly through the 3 years course. Each scholar must prepare class and laboratory notes and home work. Not more than 24 scholars were admitted in 1911.

Time Table (Hours per week.)

Subject.	1st Year	2nd Year	3rd Year (1st & 2nd terms.)	3rd Year (3rd term.)
Calculations	6	4	4	4
Drawing	6	5	4	6
English	6	4	4	.....
Exp. Science	4	7	6	4
Workshop Practice	8	10	12	16

SESSIONAL PAPER No. 191d

CHAPTER X: THREE BOROUGHS IN LANCASHIRE.

A summary of the provisions made for technical instruction in three towns in Lancashire is given as illustrative of what is done in boroughs of relatively small population.

Barrow-in-Furness is a shipping and manufacturing centre with a population of 63,000. It has shipbuilding works, large docks, steel and iron works, engineering shops, foundries, etc.

Accrington lies 23 miles north of Manchester. Its principal industries are cotton spinning, weaving, calico printing, and the manufacture of textile machinery. There are coal mines and quarries in the neighbourhood. It has a population of 45,000.

Widnes is a town of 31,500 population situated 13 miles from Liverpool. It is a centre of manufacture for alkalis, etc.

SECTION 1: BARROW-IN-FURNESS.

The following information and suggestions were kindly furnished to the Commission by Mr. George Grace, Principal of the Municipal Technical School, after conference with the Staff of the School.

THE PROVISION AND TRAINING OF TEACHERS FOR TECHNICAL SCHOOLS.

The problem of providing the best kind of teacher for Technical Schools is not one which can be solved by one method alone. The subjects usually taken in these schools vary so much in their nature and in the kind of qualification necessary for their successful exposition, that it is advisable to consider the problem under at least two heads.

(*a*) Certain subjects, of which Mathematics is the most important, require clear thinking and thorough methods of teaching rather than extensive technical knowledge. Generally the best teachers are those who have been trained to the teaching profession, but whose tastes lead them to take an interest in the industrial applications of their subject.

The only assistance needed by these teachers is in the collection of the right type of example needed for technical purposes, and occasional assistance by some one with fuller technical knowledge.

(*b*) Other subjects such as Machine Drawing, Technical Electricity, Building Construction, etc., which deal mainly with technical knowledge, are best taught by men having considerable experience.

This is especially true of the advanced classes. Even here, however, it is necessary to recognize that successful instruction must be based on the scientific principles underlying the subject, and it is essential that the teacher should have a thorough grasp of these as well as of the empirical knowledge to be gained in the shop.

Very few of these men are likely to make successful teachers without some training in teaching method. Where possible they should spend some time working under an experienced teacher who should hear the lessons given by them and have authority to criticize or suggest improvements in method.

To take men straight from shop work and let them commence teaching without some training is likely in most cases to end in disaster.

At the same time it must be borne in mind that there are exceptional cases where men seem to have the ability to teach well without any such training.

Also, that more skilled teaching is necessary for elementary students than for those more advanced, and that a man with the requisite technical knowledge may make a good teacher for advanced classes who might be unsuitable for a class of beginners in the same subject.

THE INTRODUCTION OF MACHINERY INTO TECHNICAL SCHOOLS.

For such schools as the Barrow Technical School, where students are engaged in actual shop work during the day, it was unanimously agreed that there was no need for further school instruction in shop methods.

The function of the school should rather be instruction in the scientific principles underlying the industry in which the boys were engaged, and training in clear thinking, than in giving further practice in the manual part of their profession.

The head of our Engineering Department was head master in a "Trade School" in Ireland in which boys were taken immediately on leaving an ordinary Elementary School and given instruction in the underlying principles of their trades (Building Trades and Engineering), including instruction in working methods. He speaks highly of the result. It was found that the boys after passing through such a training were more useful when they entered their apprenticeship, and learnt their business more quickly. (The masters appreciated them enough to commence them with 10s. per week instead of 4s. or 5s.) He was also definite on the point that this kind of instruction did not mean "teaching them their trades in school," and that it needed supplementing by some kind of apprenticeship.

WHAT TECHNICAL SCHOOLS CAN DO TO ASSIST IN SOCIAL REFORM.

It is not felt that technical schools could deal directly with this problem. Students suitable for acceptance in a technical school are not likely under any circumstances to become abjectly poor. Indirectly, however, it was felt that a good technical school could render incalculable service in raising individuals of ability from even the poorest classes into positions where their talents could be of great service to the nation.

For the bulk of the poorest classes, however, the question was one for schools of a different type, nearer the ordinary Continuation School than the Technical.

If attendance at these schools be made compulsory, and boys kept under strict discipline until 16 or 17, it would be a great service in preventing the growth of the unemployable class.

The aim of the schools, however, should rather be towards the improvement of general intelligence and keeping the boy under rigid discipline than to the imparting of technical instruction which would be of little service to him.

It was felt by the meeting that one of the causes of poverty and failure in life was the number of blind-alley occupations which do not train the boy for any position suitable for an adult, and which leave him too much to his own devices during the years from 12 to 16, when his habits are being formed, and when he needs very careful supervision and advice.

Several of the staff who have spent most of their lives as workmen, are of the opinion that much of the trouble in England is due to the impossibility of finding regular work for everybody under anything like pleasant conditions, and that no system of education can do anything to remedy this.

Evening Schools.

The work of the Evening Schools in various parts of the town has been so arranged as to provide the preliminary instruction required by all Students before they attend the classes in the Science, Technological, or General Divisions of the Technical School.

In future it is intended to confine the instruction in the Technical School to more advanced work than is done in the other Schools, and the Committee strongly recommend young students to properly qualify themselves by attending an Evening School before joining the Technical School.

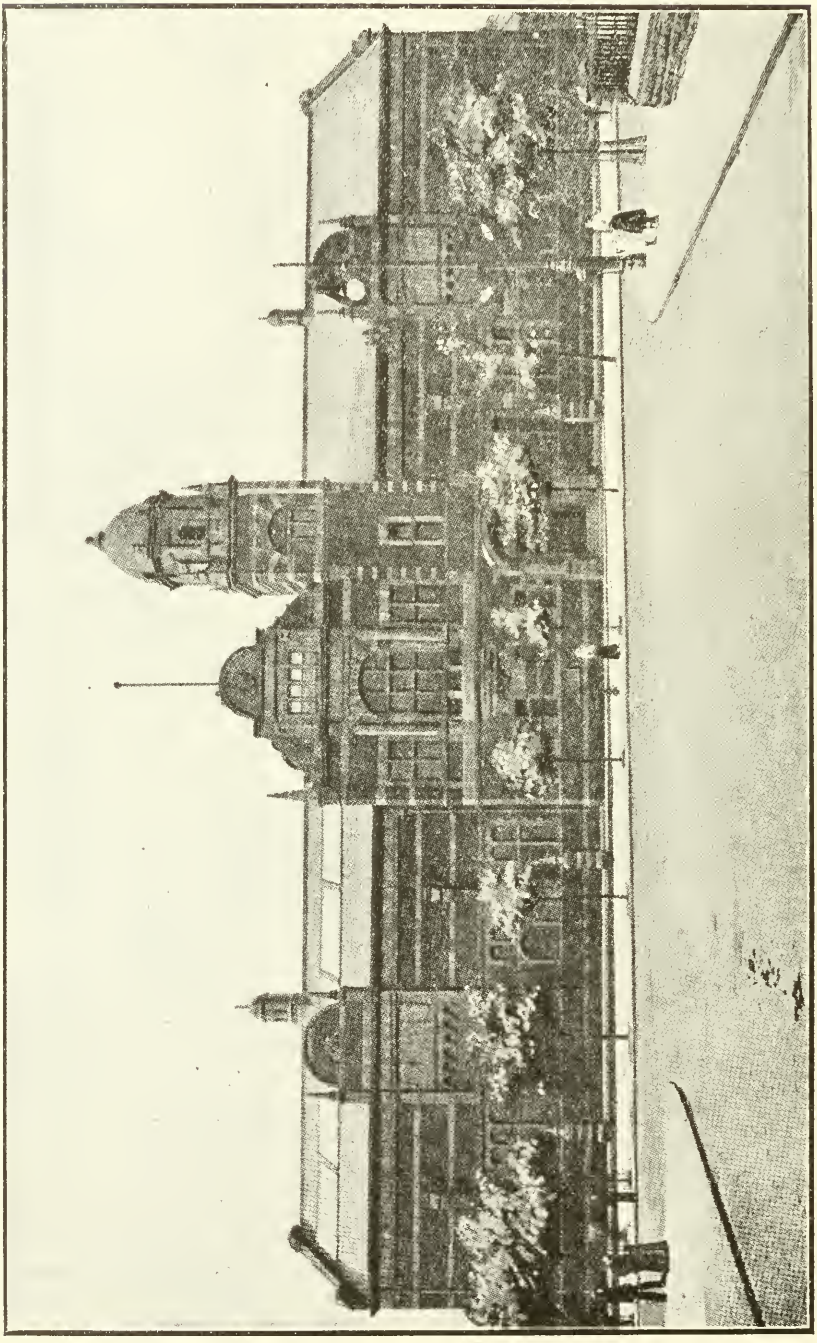
No pupil, attending a day school which receives grants from the Board of Education, will be admitted to any of the Evening Classes.

Fees must be paid in advance, and Students, who are admitted at a reduced fee, by joining a Course, will be expected, if they cease attending any of the Classes, to pay the amount of the reduction which has been allowed.

THE TECHNICAL SCHOOL.

The Curriculum comprises courses of instruction in Art, Science, Technology and General subjects, conducted under the Government Board of Education, the City and Guilds of London Institute, the Union of Lancashire and Cheshire Institutes, and the Royal Society of Arts.

The Classes are carried on mainly with a view to enable artisans—including apprentices, journeymen, foremen, draughtsmen and others—engaged in the principal industries of the town and district (shipbuilding, engineering, and the various building trades) to obtain such technical instruction in Science and Art as will prove useful to them in their respective trades or professions, and also conduce to their general intellectual improvement and advancement.



TECHNICAL SCHOOL: BARROW-IN-FURNESS.

The instruction given also affords suitable preparation for candidates for National Art and Science and Whitworth Scholarships, Royal Exhibitions, etc., and several of the Classes meet the requirements of Teachers and others preparing for the London University Matriculation and other public Examinations.

As satisfactory progress depends upon the work done by the Student himself, special importance is laid on the amount and regularity of Home Work, and any Student who refuses to do Home Work may, at the discretion of the Principal, be dismissed from the School.

Sections of Technical Instruction.

The work of the Technical School is carried on in seven sections:—

Section I.—School of Arts and Crafts;

Section II.—Mechanical Engineering;

Section III.—Naval Construction;

Section IV.—Electrical Engineering;

Section V.—Building Trades Classes;

Section VI.—Chemistry and Metallurgy;

Section. VII.—General.

Each Section or Department is under a competent Head, with Assistants for the various divisions; *e.g.*, the Department of Mechanical Engineering has divisions for Machine Construction and Drawing, Practical Mathematics, Mechanics and Mechanical Engineering, Heat Engines, Practical Steam, and Metallurgical Chemistry.

There are courses for 5 years, and advanced classes beyond the fifth year.

An outline of the Mechanical Engineering Course is given for its own sake, and also because it is typical of the thoroughness and comprehensiveness of the work covered by the other departments of the school.

The classes are held in the evening from 7 to 9.30 o'clock.

Mechanical Engineering Course.

The elementary stages of the subjects connected with Mechanical Engineering have been arranged in Group Courses, which indicate the order in which the subjects should be studied. These courses occupy three evenings per week.

A Group Course Certificate is awarded to Students who fulfil certain conditions. This Certificate is recognised by the Liverpool University as equivalent to part of their Engineering Course. Students holding it are allowed certain concessions if they afterwards attend the University.

In the Advanced Stages each Student is allowed to choose his own programme, but must submit it to the Principal for approval.

First and Second Year Courses.

Arrangements have been made to take these in the following Evening Schools in the town:—Secondary School, Vickerstown School.

Third Year Course.

No Student will be admitted to this Course who cannot show that he has a sufficient knowledge of the subjects taken in the first and Second Year Courses.

The following subjects must be taken:—

Practical Mathematics—Stage I.
Mechanics and Practical Mechanics—Stage I.
Machine Drawing—Stage I.

The following is an outline of the *Syllabi of Subjects:*

PRACTICAL MATHEMATICS.

Stage I.

Arithmetic.—Revision of contracted methods, rough checks and the application of geometrical methods of calculation.

The use of logarithms.

Mensuration.—Areas of rectilinear figures and circles. Parts of circles and irregular figures such as indicator diagrams.

Surfaces of cones, cylinders, etc.

Volumes of regular solid forms, and the applications of mensuration to practical problems.

Algebra.—Elementary algebra to simultaneous equations with practice in manipulation of formulæ, such as found in engineering pocket books.

Trigonometry.—The meaning and use of the trigonometric functions. Solution of simple triangles.

Squared Paper.—The use of squared paper to solve problems where quantities are connected with one another according to simple laws.

Interpolation. Curves of percentages, etc.

Text-Book.—Saxilby's "Introduction to Practical Mathematics," 2/6.

MACHINE DRAWING.

Stage I.

The construction, proportions, etc., of simple machine parts, such as riveted joints, bolts, nuts and screws. Simple couplings for shafts, pistons, etc.

The geometrical constructions used in mechanical drawing and the accurate use of instruments.

The preparation of working drawings and tracings, according to ordinary drawing office methods, the examples being chosen with the view of gradually developing the student's knowledge of projection.

Each student will be expected to provide himself with a Sketch Book in which to enter sketches and notes. He will also be expected to make dimensioned sketches from actual parts of machines and models, and from these sketches to prepare complete drawings to scale.

NOTE.—Students should consult the Teacher before purchasing Drawing Boards or Instruments for this Class.

TEXT BOOK.—Machine Drawing by T. & T. G. Jones, Book I., 3s.

APPLIED MECHANICS.

Problems in simple statics.
Centre of gravity. The lever. Principle of work.
Simple machines and the applications of the principle of work and principle of moments.
Mechanical advantage and efficiency.
The laws of dry friction on horizontal and inclined planes.
Simple cases of tension and compression. Hooke's law. Elastic limit, etc.
The use of measuring instruments, micrometers, and other gauges.
Common engineering materials, their properties, common uses, etc.
TEXT BOOK.—Duncan's Applied Mechanics for Beginners, 2s. 6d.

PRACTICAL MECHANICS.

Stage I.

A Special Laboratory has been fitted up for experimental work in Mechanics, so that each Student shall be able to perform simple quantitative experiments and demonstrate the elementary principles of Mechanics, such as:—

Resultant of a number of forces acting at a point.
Conditions of equilibrium on an inclined plane.
The laws of the lever.
The laws of dry friction.
The effects of tension, compression, torsion and bending, Strength of wires of different material.
The relation between the work put in and that given out in screw jacks, cranes, pulleys, etc.
NOTE.—Students attending this Class must keep proper Laboratory Note Books, and submit these periodically to the teacher for correction.
This requirement is not optional on the part of Students, but an essential condition of entrance to and continuation in the class.

Fourth Year Course.

Students may be admitted to any of the subjects in this course if they can shew a satisfactory knowledge of the work taken in the corresponding subjects of the Third Year Classes.
The following subjects must be taken:—
Practical Mathematics, Intermediate Stage.
Mechanics and Practical Mechanics, Intermediate Stage.
Machine Drawing, Intermediate Stage.
Any Fourth Year Student who is not sufficiently advanced may take a Stage I Class in any subject instead of the above.

PRACTICAL MATHEMATICS.

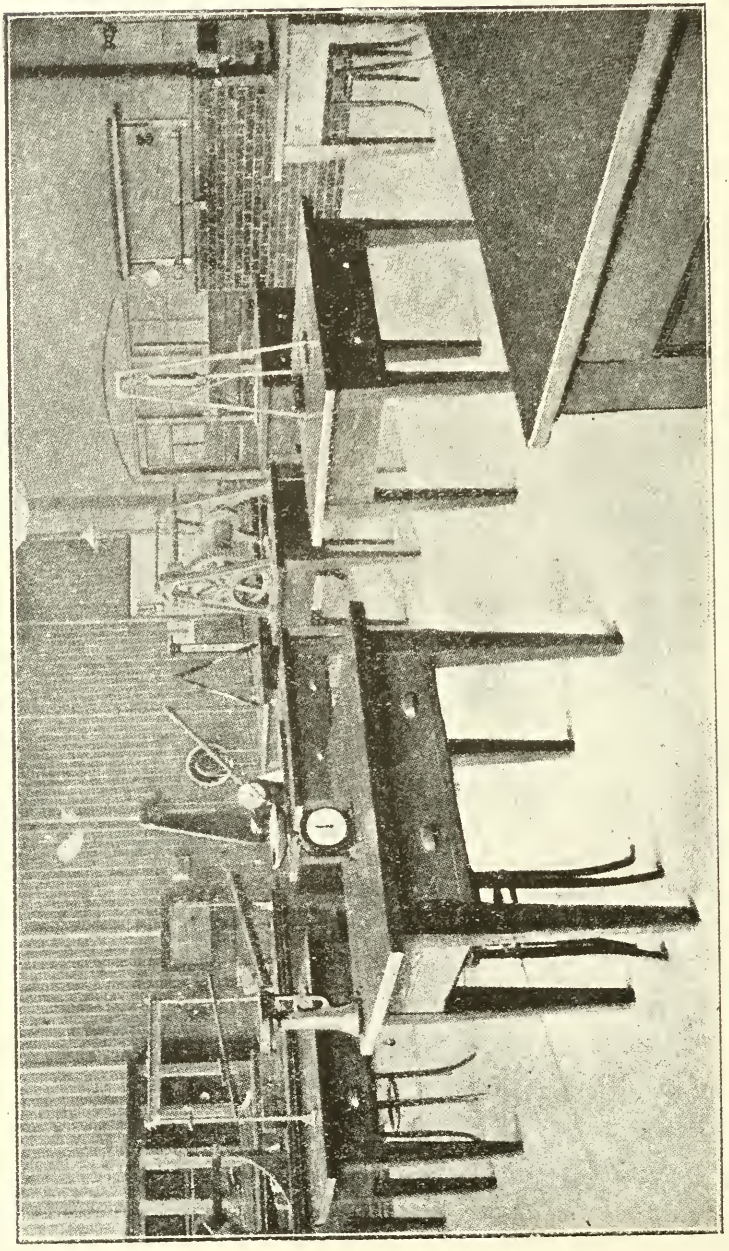
Intermediate Stage.

Practice in the use of logarithms, especially in difficult cases of negative and fractional indices.
More difficult problems in mensuration.
Determination of volumes of irregular solids by method of sections.
Algebra to quadratic equations. Partial fractions.
Practice in the use of trigonometrical formulæ, and simple cases of the solution of triangles.
Measurement of angles in radians. Measurement of angular velocity.
Use of accurate drawing in the solution of problems, especially when measured drawings can replace complicated calculation.
The use of squared paper for more difficult curves.
Full investigation of straight lines and simple cases of maxima and minima. Laws of form ax^n. $a+bx^2$, $a+bx+cx^2$, etc.
Determination of mean values, areas, etc.
TEXT BOOK.—Saxilby's Practical Mathematics, 6/6.

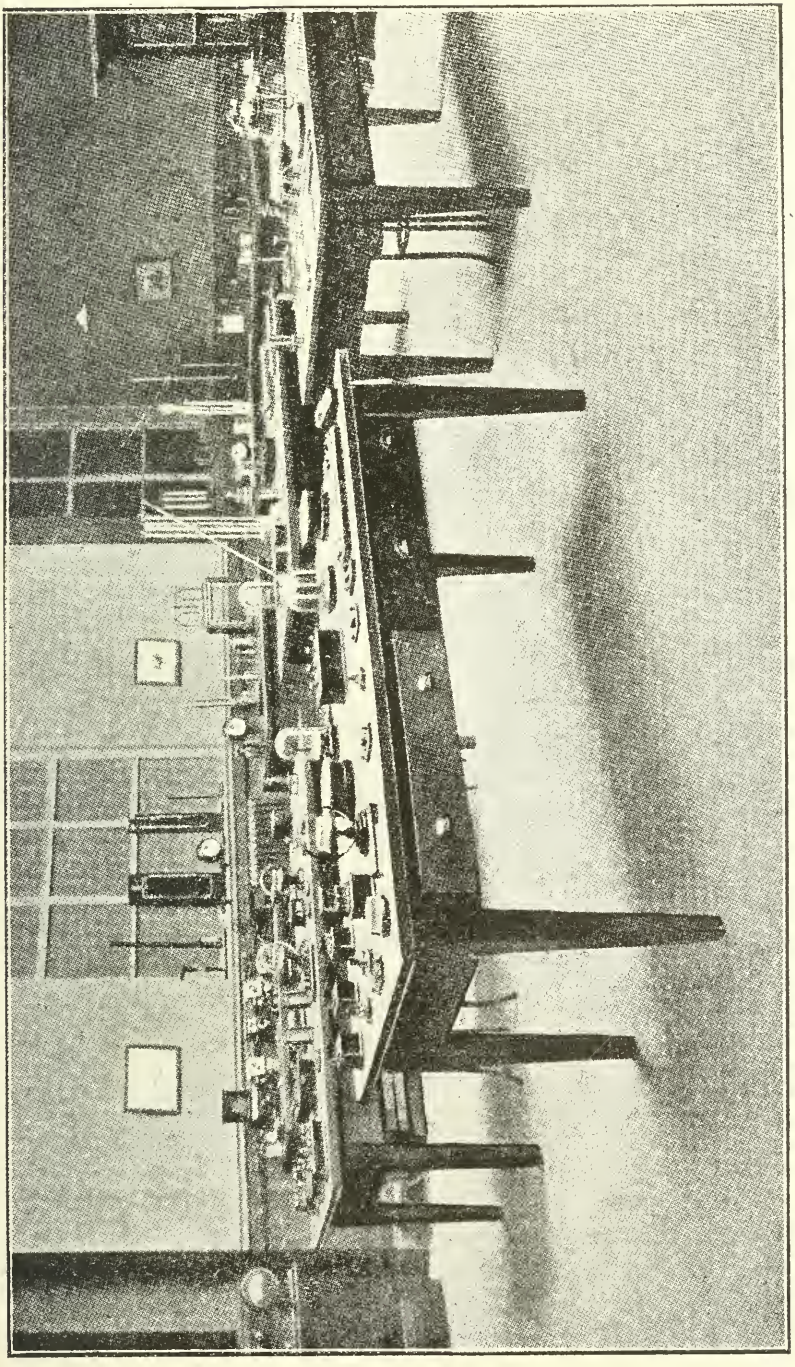
MACHINE DRAWING.

Intermediate Stage.

In this class more difficult work in Machine Drawing will be attempted, including more difficult Geometrical Constructions used by draughtsmen, such as:—
Double curves. The projection of curves in three dimensions, such as on the headstock of a lathe. Projection of a screw on a cylinder.
Also lessons will be given on the construction and proportion of more complicated machine parts, such as:—
Bearings and pedestals, couplings and clutches; the teeth of wheels, Bevel wheels; the construction of crossheads, eccentrics, pistons etc.
Students will be expected to provide themselves with accurate drawing instruments and note books, and to submit their drawings and sketches periodically for the inspection of the teacher .
The Prizes in these classes will be given for the best set of work done during the session.
TEXT BOOK.—Machine Drawing by T. & T. G. Jones. Book I., 3s.



TECHNICAL SCHOOL: MECHANICS LABORATORY.



TECHNICAL SCHOOL: ELEMENTARY ELECTRICAL LABORATORY.

MECHANICS.

Intermediate Stage.

Revision of Third Year's Work.
Statics of four and more forces acting at a point. Funicular polygon and its application.
More difficult cases of parallel forces.
Fuller investigation of friction between dry and lubricated surfaces.
The transmission of power.
The study of mechanisms such as toggle joints, quick return motions, epicyclic trains, etc.
Elementary cases of tension, compression and torsion, etc.
The properties of the chief materials used in engineering.
Hardening, tempering, annealing, etc.
Elements of Dynamics, Potential and Kinetic Energy, Energy Rotating Fly Wheel.

PRACTICAL MECHANICS.

Intermediate Stage.

Continuation of Third Year's Course, with more difficult experiments in Statics, Friction, Tension, Torsion, Bending, etc.
Experiments with inclined planes, epicyclic trains, toothed gearing, etc.
Experiments in Dynamics.
Hydraulics: Discharge from orifices, over weirs, down pipes, etc., effect of bends.
Hydraulic jack.

Fifth Year Course.

Students may be admitted to any of the classes in this course if they can show a satisfactory knowledge of the work taken in the previous courses.
The following subjects must be taken:—
Practical Mathematics—Stage II.
Machine Drawing—Stage II.
Heat Engines and Practical—Stage I.
Any Fifth Year Student who is not sufficiently advanced may take an Intermediate Stage Class in Mathematics or Machine Drawing.

PRACTICAL MATHEMATICS.

Stage II.

Further practice in the use of logarithms and other mathematical tables.
Evolution from more difficult formulæ.
The trigonometrical ratios of one angle, including the solution of right angled triangles.
Use of squared paper for investigation of $y = ax^n$, $y = ac^{bx}$, etc.
Graphic solution of equations. Determination of laws from experimental data. Substitution of linear for more complex laws.
More difficult mensuration.
Rate of increase. Simple differentiation. Maximum and minimum values. Easy integration.
TEXT BOOK.—A Course in Practical Mathematics. F. M. Saxilby. Longman's, 6/6.

MACHINE DRAWING.

Stage II.

In this class Students attempt a series of drawings illustrating the construction in detail of some fairly complicated piece of machinery, such as a small marine engine or locomotive.
The drawings made are finished and fully dimensioned as if for shop purposes. Each Student has the opportunity of learning not only the preparation of drawings in pencil, but of making finished tracings suitable for reproduction.
A prize is offered by the Committee for the best set of drawings done in this class.
By the kindness of Messrs. Vickers, an Air Compressor has been erected in the School, which Students have the opportunity of measuring and drawing.
TEXT BOOK.—Low and Bevis's Machine Design.

HEAT ENGINES.

Stage I.

The fundamental principles of physics on which a scientific knowledge of steam and other engines must depend.

Thermometry. Calorimetry. Capacity for Heat. Specific heat. Latent heat. Total heat of evaporation, etc.

Fuel and the heat of combustion of fuel.

The properties of steam. Boyle's law. Use of steam tables, etc.

General description of steam engines and the details of their construction, *e.g.*, cylinders, pistons, crossheads, cranks, eccentrics, etc.

The action of the slide valve, and the effect of lap, lead, etc.

The indicator and meaning of the diagrams taken by it.

Boilers, their construction and simple calculations about them. Common fittings.

This course will be illustrated by specially prepared diagrams and lantern slides taken from modern engines.

TEXT BOOK.—Duncan's Steam and other Engines. 5s.

PRACTICAL STEAM AND HEAT ENGINES.

In this Course Students perform for themselves the experiments described in the Theoretical Lessons, including:—

Simple experiments in Thermometry and Calorimetry.

Determination of Boyle's Law. Relation between temperature and pressure for steam, etc.

Determination of calorific value of fuels.

Investigation of Indicator Diagrams, including use of planimeters.

Study of motion of parts of an engine, including the effect of altering the lap and lead of a slide valve, reversing gears, expansion valves, etc., by means of moving models.

A small portable engine and boiler and a petrol motor have been arranged in the basement for experimental purposes, and will be used for determining B.H.P., I.H.P., coal and petrol consumption, etc.

TEXT BOOK.—Duncan's Steam and other Engines. 5s.

ADVANCED CLASSES IN MECHANICAL ENGINEERING.

These Classes cover most of the work required for the Stage III. Examination of the Board of Education, the Honours Examinations of the City and Guilds Institute in Mechanical Engineering, the London B.Sc. (Engineering) and the Institute of Civil Engineers' Examination.

Students who have passed through the work of the Third, Fourth, and Fifth Year Courses satisfactorily are allowed to choose a programme to suit their particular circumstances.

PRACTICAL MATHEMATICS.

Stage III.

No student is admitted to this class who does not shew a sufficient knowledge of the work done in Stage II.

Syllabus.

The use of approximate formulæ and their derivation.

Partial Fractions. Imaginary and Complex Quantities.

Knowledge of limits in such cases as $\frac{\sin x}{x}$

Determination of values of sin x, cos x, e^x, and log x, using series.

More advanced Trigonometry, including the addition formulæ and the solution of triangles.

Theorems relating to areas and volumes of solids and surfaces of revolution.

Graphic methods of finding centre of gravity and moments of inertia.

Plotting of functions $y = a \sin (cx+d)$, etc.

Harmonic motion, Fourier's Series. Harmonic analysis. Vector Algebra. Scalar and Vector products.

Further work in differentiation and integration.

Simple differential equations.

Problems in differential and integral calculus and their application to Engineering.

TEXT BOOK.—A Course in Practical Mathematics, F. M. Saxilby (Longman's), 6/6.

MECHANICS AND MECHANICAL ENGINEERING.

Stage II.

This subject is divided into two sections, viz.: "Strength of Materials" and "Machines and Hydraulics."

Students may take either section, or both, during the same session.

Graphic Statics—

Including the determination of centres of gravity and moments of inertia by graphic methods.

Strength of Materials—

Tension, Torsion, Compression, Bending, and Shearing considered in detail. Application of principles to the design of riveted joints, beams and girders, etc.

Strength of thin shells and of thick cylinders as used for hydraulic presses.

Behaviour of materials when tested. Fatigue, elasticity and elastic limits. Deflection of beams.

Reinforced concrete. Struts and pillars. Arches. Strength and stiffness of springs.

Students are recommended to take the Advanced Laboratory Course in connection with this class.

Machines—

Problems on velocity, acceleration and force.

Mechanisms, Belts, Ropes, Chains, Links, Wheel Trains, etc.

Friction of Screws, Rollers and Belts.

Dynamics of rotating bodies and application to fly wheels, governors, and the balancing of engines.

Effect of a blow, reciprocating motion and vibration.

Harmonic motion and torsional rigidity.

Hydraulics—

Flow of water over notches and in channels.

Effects of friction in pipes, etc.

Hydraulic machinery, lifts, presses, pumps, turbines, jacks, etc.

TEXT BOOK.—D. A. Low's Applied Mechanics (Longman's), 7/6.

Students are recommended to take the Advanced Engineering Laboratory Course in connection with this class.

MECHANICS AND MECHANICAL ENGINEERING.

Stage III.

Graphic Statics—

Resultant of forces not in one plane. Force diagrams for roof trusses and built-up girders.

Strength of Materials—

Testing of materials, influence of shape of test pieces. Impact and other tests.

Beams and Girders—

Relation between bending movement, curvature, slope and deflection. Continuous girders. Riveted joints.

Struts—

The Euler, Rankin and Gordon formulæ. Eccentric loading.

Retaining Walls—

Reinforced concrete beams and struts. Masonry and metal arches.

ENGINEERING LABORATORY.

The Engineering Laboratory, which is well equipped for experimental work in Mechanics and Engine Testing, is open on Monday, Wednesday and Friday mornings from 9 to 12 and Wednesday, Thursday and Friday evening from 7 to 9.30. The work done may be selected from the following:—

Testing of materials in tension, compression, torsion, shear and bending.

Deflection of beams fixed at the ends. Continuous beams.

Determination of B.H.P., I.H.P., water and fuel consumption, etc., of steam and petrol engines.

Calorific value of solid and liquid fuels.

Dryness, fraction and quality of steam.

Balancing of rotating masses and other dynamical experiments.
Flow of water over weirs and through orifices.
Friction of water in pipes, etc.
No student is admitted to this course who does not show sufficient theoretical knowledge of the subject to benefit by the experiments.

HEAT ENGINES.

Stage II.

Students in these classes should have done, or be doing, Practical Mathematics at least equal to the level taken in the Stage II Class of that subject.

Properties of Steam and Gases—
The application of thermo-dynamics to Heat Engines. Calculation of mean effective pressure in Single, Compound, Triple and Quadruple Expansion Engines.
Determination of dimensions for cylinders. Limits of useful expansion. Cylinder condensation.

Engine Mechanism—Slide valve diagrams. Effect of lap, lead, advance, etc., link motions. Radial gears.
Governors and fly wheels. Variation of effort on crank. The balancing of simple engines.

Design—Types of steam engines and Internal Combustion Engines. Arrangement and construction of details.
Construction and action of turbines.
Types of boilers, their construction and details of fittings.
Combustion and calorific value of fuels.
The course is illustrated by lantern slides of modern engines, details, etc.

Stage III.

The Properties of Steam and Gases in general—Including more advanced examination of engine cycles. The behaviour of steam in the cylinder and gases in internal combustion engine.
Entropy and entropy diagrams.

Engine Mechanisms—Valve motions, problems on valve and valve gear design. The balancing of engines. Curve of crank effort. Acceleration and inertia effects. Governor problems. Balancing by arrangement of cylinders.
Indicators and indicator diagrams. Compound engine diagrams and their relation.
Engine and boiler testing. Balance sheet for engines.

Design—High speed engines. Corliss and trip gears. Locomotives. Turbines. Gas, Oil engines and Producers.
Lancashire, vertical, tubular, marine and other boilers. Boiler fittings.
This course is illustrated by a specially prepared set of lantern slides.

MACHINE CONSTRUCTION AND DRAWING.

Stage III.

The course of study arranged in this stage comprises a series of examples of the application of the ordinary formulæ in use for the proportioning of machine details—strength and proportion of riveted structures—shafting under tortional and bending stresses—belting and other methods of transferring energy.
Graphic methods of dealing with the mechanism of the steam engine. The design of cycloidal and involute teeth. Physical properties of materials. Special mechanism adopted in the construction of machine tools—cams— quick returns in cutting tools, etc.
Students are assumed to be conversant with the geometrical problems involved in machine drawing, as in this stage more than ordinary knowledge of projection is insisted on.

METALLURGICAL CHEMISTRY.

This class has been arranged specially to supply advanced Engineering Students with some knowledge of those parts of Chemistry and Metallurgy which are of most importance in Engineering.
Each evening's work consists of one hour's lecture, and one and a half hours in the Laboratory.

Chemistry—Objects of Chemistry. Chemical action. Elements. Compounds. Symbols, Formulæ. Equations, etc.

The laws of chemical combination.

Commonly occurring elements, especially those used in engineering, such as carbon, sulphur, phosphorus and silicon; their chief properties and uses.

Acids, Gases, Salts, etc., used in engineering chemistry.

Air and Combustion, rusting and oxidation in general, and means of prevention.

Metallurgy—The scope of Metallurgy, physical properties of metals. Metallurgical terms and processes.

Furnace types. Refractory materials.

Fuel—Calorific power and intensity: Wood, coal, coke, oil, gaseous flues, etc.

Producers and producer gas, etc. Regenerative systems.

Blast furnace waste gases, their cleaning, composition and general uses.

Coke Ovens and their bye-products.

Pyrometry.

Water—Its composition, usual impurities, hardness, scale in boilers. Softening processes and their objects. Causes of pitting and erosion in boilers.

Iron—The ores of iron. Preparation of ores and extraction of the metal. The Blast furnace, its structure and working. Composition and grading of pig irons. Influence of impurities, i.e., carbon, silicon, manganese, sulphur, phosphorous, etc. Cast and malleable iron. Wrought iron, its preparation, uses and properties.

Steel—Definitions and classification of steel. Ordinary processes for making steel. Composition and mechanical properties of typical varieties. Hardening, tempering, annealing, etc.

Non-ferrous Metals used in the Foundry—Copper, zinc, lead, tin, antimony, nickel, cobalt, aluminum, manganese, etc. Their ores, extraction, properties and uses.

Common Alloys—Composition of brasses, bronzes, gunmetal, bearing metals, etc. Their relation between composition and properties.

SECTION 2: ACCRINGTON.

THE EVENING CONTINUATION CLASSES.

The Education Committee of the Borough have established Evening Classes at six centres in the Day School buildings. The courses are for two years. There are also preparatory courses for those who are not qualified to go on with the Technical, Commercial, or Domestic Courses.

The classes are held from 7 to 9 in the evenings three times a week.

Those who have taken these evening classes are prepared to go on to the classes at the Municipal Technical School.

MUNICIPAL TECHNICAL SCHOOL.

The objects of the School are to give, by carefully arranged courses of Study, a thoroughly practical knowledge of Drawing, Painting, Design, and Modelling, especially in their application to the professions and trades of the district, so as to furnish useful training to those who intend to work as Architects, Designers, and Craftsmen.

In addition to this, it is the object of the School to assist those who desire to make Art a part of their general education; and also to give facilities to those wishing to follow Art as a profession, or to include it in their general qualifications as Teachers in Primary, Secondary, or Art Schools.

SUBJECTS OF ART INSTRUCTION.

ELEMENTARY.

Freehand, Model, Geometry, Perspective, Light and Shade, Design, and Modelling.

Industrial Art Course, in connection with the Examination Scheme of the Lancashire and Cheshire Institutes.

ADVANCED.

Design.—Textiles, Wall-papers, Stencils, Furniture, Lithography, Metal Work, Wood-carving, Plaster Work, Gesso, Embroidery, Printed Cottons, etc.

Life Class.—Drawing, Painting, Figure Composition.

Modelling.—Ornament, Figure, Designing in Relief.

Architecture.—Design, Decoration, History and Development, Building Construction.

Painting.—Interiors, Flowers, Still Life.

Textile Design Class.—A special course of instruction is arranged for students attending the Weaving Classes.

Painting and Decorating.—Special Class for drawing examples of Historic Ornament. Setting out walls and ceilings. Designing for stencils.

Advanced students take Decorative Painting with the pencil as distinct from Stencilling.

Craft Work.—Pottery, Tiles, Metal Work, Mosaic, Gesso Work, Embroidery, Weaving, Practical Painting, Decorating and Sign-writing, Jeweller's Work.

Systematic Courses.—Extending over 4 or 5 years are given in Applied Art, Architecture. Painting and Decorating, Sculpture, Plastering, Cabinet making, Photography.

SCIENCE AND TECHNICAL COURSES.

These are given during five years in the evenings in the following subjects:—

Applied Mechanics, Building Construction, Cotton Spinning, Cotton Weaving, Coal Mining and Surveying, English, Experimental Physics and Mechanics, Heat Engines, Human Physiology, Hygiene, Inorganic Chemistry, Machine Construction, Magnetism and Electricity, Organic Chemistry, Plane and Solid Geometry, Practical Drawing, Practical Mathematics, Practical Mechanics, Plumbing, Pure Mathematics.

Four or five year courses are given in: Mechanical Engineering, Electrical Engineering, Chemical Industries, Building Trades, Plumbing Trades, Textile Trades (Cotton Spinning and Weaving), Coal Mining.

There are also courses in Domestic subjects, Commercial subjects and Natural Sciences.

SECTION 3: WIDNES.

The educational scheme for the borough includes Evening Continuation Classes and courses at the Municipal Technical School. The Education Committee makes the following statements in its announcement:

In order to gain any sound knowledge of a Technological subject, or of any special branch of Science, it is necessary that other allied subjects be also studied.

In all cases a preliminary knowledge of Elementary Mathematics, Geometry, General Science, and English is essential before attempting any one of the special branches. Past experience has shewn that a disregard of this preliminary knowledge has been the cause of much disappointment to both teacher and pupil; consequently, in order that all pupils attending these classes may have the opportunity of obtaining the maximum benefit in the limited time available, the scheme of work at the Technical School and Continuation Schools has been carefully co-ordinated and systematised.

Furthermore, Courses of Study, extending over 3, 4 or 5 years, and bearing upon the trades and industries of the Borough, have been organised. Students will be required to take the Course most suitable to their trade or profession, and to their standard of previous attainment; and also to take three classes where provided in the selected course. Only in very exceptional cases will they be allowed to take individual subjects, by permission of the Principal. As a general rule, students will be expected to have passed through the Evening Continuation School before entering the Technical School, or to show evidence of a standard of instruction equivalent to that of the Preliminary Technical Certificate of the Union of Lancashire and Cheshire Institutes.

Students who have passed the examination at the end of the First Year's Course may proceed to the Second Year's Course in the department which they select. Teachers hold an entrance examination in their respective classes at the commencement of the Session, and students obviously unfitted to benefit by the classes they have chosen are transferred to a more suitable Course.

Facilities are given, in most of the Courses, for practical work, but attendance at the corresponding Theoretical Classes is compulsory.

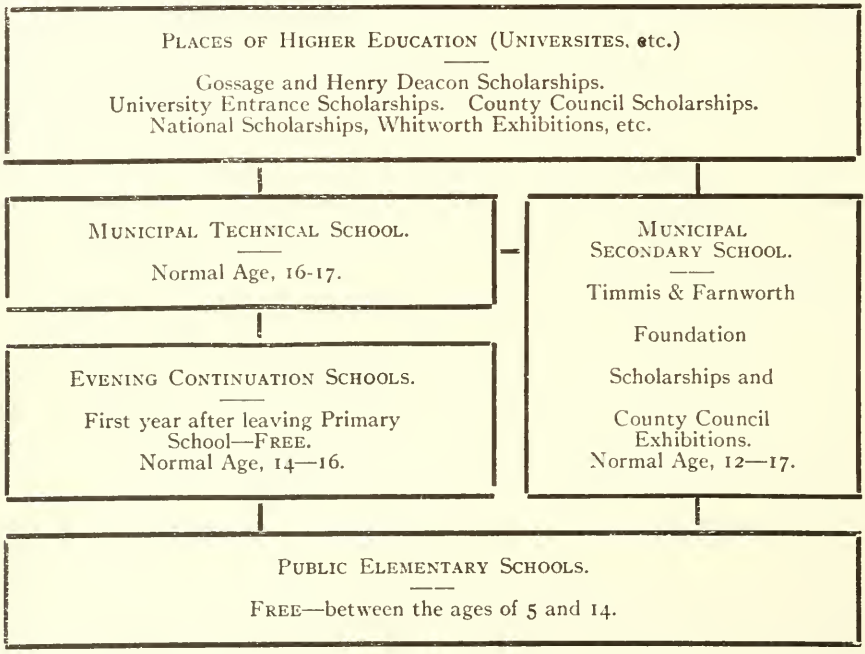
Miscellaneous Classes have been established in Ambulance (Men and Women), Cookery, Dressmaking, Elocution and Voice Production, English, Esperanto, French, Horticulture, Pure Mathematics, Millinery, Needlework, Principles of Teaching, Physiology, Singing (Elementary and Advanced), Theory of Music, Welsh, to meet the needs of adult Students who desire to take up the study of some subject of a recreative character, or to extend their general knowledge. Students of full age, who do not hold Works Vouchers, may attend one or more of these Classes at their option.

While no Classes have been specially arranged to suit Civil Service Examinations, it will be found that many of the Classes will form a very suitable preparation for the same. The Principal will be happy to give any advice to any students desiring to enter the Civil Service.

The following diagram illustrates the provision made in Widnes for free and assisted Education at Day Schools and Evening Schools up to the age of 19.

The facilities offered make it possible for a boy or girl leaving the Elementary School at 13 to proceed to the Secondary School and thence to the University at the age of 18 or 19.

Those unable to attend the Secondary School may, after passing two years in the Evening Continuation Schools, proceed to the Technical School for 4 years and thence to the University, Manchester School of Technology, Royal College of Science, or other place of Higher Technical Education.



When a subject is taught in two or more stages, students are require to have worked successfully through the lower stage before entering a class in a higher stage of the same subject.

As a general rule, *industrial students* will be required to take a course of subjects, and attend 3 evenings per week, and will not be allowed to join for one subject only.

MUNICIPAL TECHNICAL SCHOOL.

I.—COMMERCIAL COURSE.

Accountancy and Banking, Arithmetic, Commercial Book-keeping, Commercial Correspondence, Commercial Law, Economics, English (Commercial), French, Geography, Shorthand, Typewriting,

II.—CHEMICAL INDUSTRIES COURSE.

Alkali Manufacture, Chemistry, Physics, Practical Mathematics, Metallurgy, Laboratory Curator.

III.—MECHANICAL ENGINEERING COURSE.

Applied Mechanics, Geometry and Hand-sketching, Heat Engines, Machine Construction, Practical Mathematics, Magnetism and Electricity.

IV.—METAL PLATE COURSE.

Geometry, Metal Plate Work.

V.—FOR ARCHITECTS, BUILDERS, CARPENTERS AND JOINERS.

Building Construction, Carpentry and Joinery, Practical Geometry, Practical Mathematics, Staircasing and Handrailing, Builders' Quantities, Graphic Statics, Land Surveying.

VI.—FOR BRICKLAYERS AND MASONS.

Brickwork and Masonry, Building Construction.

VII.—FOR PAINTERS AND DECORATORS.

Painting and Decorating, Drawing and Design.

VIII.—ART CLASSES.

Antique, Freehand, Geometrical, Light and Shade, Model and Perspective Drawing, Plant Form and Design.

MISCELLANEOUS CLASSES.

Ambulance, Cookery, Dressmaking, Elocution, English, Esperanto, French, Horticulture, Mathematics (pure), Millinery, Needlework (Art), Principles of Teaching, Physiology, Singing, Theory of Music, Welsh.

EMPLOYMENT REGISTER.

The Committee do not undertake to find employment for students, but many firms make enquiries at the School when in need of employees. Students desiring employment or advancement should therefore see the Principal and leave with him particulars of their qualifications, etc. He will then be pleased to inform them of any suitable vacancy which may come to his knowledge.

PRIZES AND REWARDS FOR STUDENTS.

As it is desirable that prizes shall take the form most beneficial to the students, those who obtain them have the option of choosing books on Scientific, Art, Technological, or other subjects approved by the Principal, or a part or whole of the net value may be taken in instruments or tools, which will be directly useful to the winners in their subsequent studies.

CHAPTER XI: DRAWING, DESIGN AND ART.

SECTION 1: ROYAL COLLEGE OF ART, SOUTH KENSINGTON, LONDON.

This institution, founded in 1837 with the definite purpose of encouraging the study of art in relation to industry and manufactures, is primarily intended for the Training of Art Masters and Mistresses for the United Kingdom and for the instruction of students selected by competition in the Art examinations of the Board of Education. Other students are admitted when there is room for them on payment of fees. There is no age limit for students. Candidates upon admission are placed in the upper or lower division of the school according to their proficiency.

Students go under two categories: (a) those who are passing through the course of teacher-training with a view to obtaining the "Full Associateship," and (b) those who are specializing in one or the other of the four schools of the college with a view to obtaining a "Schools Associateship."

These four "schools," or departments are as follows:— (1) Architecture; (2) Ornament and Design; (3) Decorative Painting: (4) Sculpture and Modelling. The instruction is so arranged that the students may pass through the courses in all these four schools or any one or more of them. There are also "craft classes" for students of design.

Each student on entering the College takes a preliminary course in Architecture, unless already qualified in that subject, with a view to impressing upon him the unity of the arts in their decorative aspect. The rest of the period of study follows one or more alternative courses. Students intending to become teachers take a full course covering the work of all four schools; and students such as National Scholars, for whom a shorter and more specialized course is suitable, spend the whole of their time, after the introductory term, in one department.

Full Associateship.

This entitles to the use of the initials "A.R.C.A (London)" and is granted to students who have studied in the College for at least six terms, spending at least one term in each "School" and not less than four terms in the upper division of one or more schools of the college; or who have obtained a first-class certificate in the upper division of one of the schools and a first-class in the lower work, or a second class in the upper division of each of the four schools, or who have executed a composition for a given decorative subject to the satisfaction of the "official visitors."

Candidates for Full Associateship (other than holders of Royal Exhibitions, National Scholarships, Free Studentships, and Special Studentships, who are

admitted without being required to submit works or pass entrance tests) must submit a folio of drawings in architecture, sculpture, painting and ornamental design, the latter including a sheet of letters in good Roman capitals. If these drawings are accepted, candidates must pass test examinations in three out of four subjects: (a) Architectural drawing— a small object selected from the museum, 12 hours allowed; (b) Sculpture—a model in clay of the mouth of Michael Angelo's "David," 6 hours; (c) Painting—drawing in charcoal—from life, of the head, hand and foot, light and shade being indicated, 9 hours; (d) Ornament and design—drawing from memory of piece of foliage such as oak, ash or lime.

Schools Associateship.

This is granted to students who spend four terms in the College, one being in the School of Architecture and at least three terms in the upper division of the school in which the student specializes; or who obtain a certificate in Architecture and the school certificate in the upper division of the school in which they specialize; or who have executed a composition for a given decorative subject to the satisfaction of the visitors.

Candidates for Schools Fellowships must submit works as follows:—(*a*) For the School of Architecture:—a measured study in pencil of an ancient building to scale: also mouldings full size; also some ornament with the perspective sketch of the same. (*b*) For the School of Ornament and Design:—six drawings from nature or architecture, of which two must be careful pencil drawings of flowers and foliage; also a sheet of lettering. (*c*) For the School of Decorative Painting:—drawing in charcoal of antique figure, broad masses of shade only to be indicated; an anatomical study in charcoal of the same figure about one-third life dimensions; life-sized drawing in charcoal from life of the head and arm, broad masses of shade only to be indicated. (*d*) School of Sculpture and Modelling:—drawing from antique, from life, and anatomical rendering in pencil. Examinations or tests of candidates follow these lines.

Craft Classes.

Students of the Upper Division are selected for instruction in one or more of the following subjects or of such others as are from time to time included in the work of the College:—Etching and Engraving, Stained Glass, Tile Painting and Pottery, Writing and Illuminating, Tapestry Weaving and Embroidery, Stone and Marble Carving, Furniture Decoration, Wood Carving and Gesso work, Metal work and Enamelling.

The primary object of the Craft Classes is to afford students an opportunity of becoming practically acquainted with the capabilities and limitations of the materials in which their designs would be carried out. Before entering any of these classes, students must either be students in the related School of the College, or have already passed through that school.

In the School of Design and Crafts, practical workmanship in different classes is taken concurrently with the general drawing work of the studio, and

every advanced student of design will be expected to make himself proficient in the technique of one craft.

Craft Classes are already established in the subjects named above. All advanced students of Design are expected to specialize their studies with a view to perfecting themselves in one branch of art and coming into touch with special forms of industry. With that object they may be required to attend the demonstrations of the Craft Classes, and to engage in practical work of a certain number of subjects. Such special knowledge will be equally valuable to the teacher and the designer. Every student of design is required to make series of careful studies in the Museums.

The following subdivisions are suggested, but there may be some interchange of studies:—

I. Decoration, stained glass, mosaic, tapestry, etc., involving figure composition.
II. Cabinet work, house decoration, pattern painting, stencils.
III. Pottery and porcelain design, majolica, etc.
IV. (*a*) Printed stuffs, wall papers, etc.; (*b*) textiles, embroidery, lace, carpets and damasks.
V. Gold and silversmith's work, jewellery, enamelling, etc.
VI. Modelled and carved ornament, in stone, wood and plaster, Gesso work and gilding.
VII. The book and its decoration, illustrations, borders, type, initials, title pages; illumination and lettering, wood engraving, photographic reproduction, lithography, etching; bookbinding, cloth covers.
VIII. Metal work in wrought and cast iron, lead, brass, etc.

As far as possible students of the 5th year are afforded facilities for getting into touch with manufacturers.

Etching and Engraving Course.—Students in this class are required to work practically at one or more of the following methods of engraving, viz. Etching, Aquatint engraving, Line engraving, Mezzotint engraving, Steelfacing and plate printing. Tools and materials are provided.

Stained Glass Course.—The students being already trained draughtsmen and painters, the teaching is mainly directed towards the acquirement of a knowledge of the craft, and especially of craft limitations as affecting design and execution. The actual technique of painting and lead-working are therefore taught in the ordinary class lessons, and the direction and application of them in the special weekly lecture or demonstration.

Pottery Course.—The object of this class is to illustrate in a simple and inexpensive manner principles and facts relating to the making and decorating of Pottery—enabling students to design, make shapes, and decorate them, with a knowledge of the requirements of this important industry.

Other Courses.—There are also courses in writing and illuminating, embroidery and tapestry weaving, marble and stone carving, furniture decoration, wood carving and Gesso work; metal work and enamelling.

The number of students in the College at any one time varies from 180 to 200, in addition to the few who attend as external students for the etching and craft classes only. About half of them come from London, or from the urban areas of three large industrial counties—Yorkshire, Lancashire and Stafford-

shire. The remainder come in small numbers from other counties, and occasionally from Scotland and Ireland and other parts of the British Dominions. From time to time a foreign student is admitted. The age range of the students is a wide one, extending from 15 to over 40.

The total cost of the establishment is about £13,320, and the fees received amount to about £800.

Recommendations of Departmental Committee.

An investigation was made into the work of the Royal College by a Departmental Committee appointed by the Board of Education at London, and their recommendations in 1911 were:—

(1). That the training of designers for the manufacturing industries should be specialized, and this work undertaken by provincial colleges of art, each devoting special attention to the needs of the dominant local industry, associating representative manufacturers and artisans belonging to such industry.

(2). That these provincial colleges should be conducted as departments of colleges which deal with the practical and scientific as well as the artistic sides of such industries.

(3). That when such system of provincial colleges is established, the relation of the Royal College of Art to them should be that of a school of advanced studies only, providing courses of one or two years' duration adapted to the individual needs of its scholars and in close relation to the Victoria and Albert Museum.

(4). That the training of teachers of art, wherever undertaken, should be conducted under conditions involving a higher standard of general or technical as distinct from artistic attainments, and including an adequate pedagogic preparation.

(5). That Universisites should be encouraged to provide suitable degree courses for intending artists, architects, and teachers of art.

Exhibition and Competition for Designers.

The Committee anticipated that the recommended changes would rather add to than detract from the importance of the Royal College, because as a post-graduate college in close touch with art schools throughout the country it would have for the first time a well-defined position as the culminating point of the whole system of industrial art training in England.

There is annually held at the Royal College of Art in London a competitive exhibition from art schools throughout Britain, which gives evidence of constant and substantial progress in all lines of industrial art. Some of the provincial schools of art are doing remarkably well, and have become so strong that it has been proposed to discontinue the exhibition from the provincial schools, and to specialize on the work of the Royal College itself.

It appears from the report of the Departmental Committee that there is keen competition for designers among manufacturers of the innumerable articles of personal wear and domestic plenishing which constitute the staple of that section of British trade which is in any way dependent upon art, and also among the large furnishing and decorating houses. Designers who are thoroughly competent from the trade point of view can command liberal salaries. At present the needs of the industries are met in various ways; many designs are supplied by architects or other artists who have turned their attention to industrial art; many are purchased, expecially in the textile centres in and about Manchester and Bradford, from French designers. Thus the Calico Printers' Association,

who spend £37,000 a year in designs, maintain 16 designers in full work in Paris as well as 38 in London. Designs prepared in England supply the Indian market; those from Paris the markets of England, Europe and America. The Wallpaper Manufacturers' Combine is said to prefer German designs for technical adaptability, and French ones for artistic skill. Some British firms which employ regular designers train them in their own drawing offices, while others find a supply in the local schools of art.

Course in Teaching.

The instruction given at the College in methods of teaching relates to the art instruction recognised by the Board of Education as given in elementary schools, also Schools of Art for advanced and Honors Examinations, and for the National Competition. Students who enter the College with the intention of becoming teachers attend lectures given by the Principal on methods of teaching, and, as part of their training, give instruction in the College under his direction. The period of training given in the methods of teaching is spread over the whole course of a student's college career, and is intended to fit the student on leaving to become a teacher and to grapple with the various points that may arise in dealing generally with art instruction as above described.

The teaching power of each Student in Training is taken into account in awarding Travelling Scholarships and other prizes; and any Student in Training who does not show a capacity for teaching is not allowed to remain in the College as such.

The lectures treat of the following subjects:

I. The history of drawing as a means of education: the works of Rousseau, Pestalozzi, Froebel.

II. The necessity for the Art Master making himself acquainted with the system upon which pupils have been taught before entering the School of Art.

III. Review of the subjects taught in the School of Art and examined by the Board:—

(*a*) Division of the teaching between lectures, class work and individual instruction. (*b*) The life class, not an end in itself; its relation to other branches of work. (*c*) The limitations of paper work and the beginning of craft work. (*d*) Craft Classes: their relation to the classes for design, the general work of the School, and to manufactures. (*e*) The mistake of neglecting general education in the Art Student.

IV. An analysis of the system of instruction in the Royal College of Art.

V. School Management:—

(*a*) Furniture, fittings, &c. (*b*) Arrangement of class rooms, casts, school museum, library, photographs, &c. (*c*) The Head Master; his duties to his Committee, his staff and his students. (*d*) Necessity for the staff continuing their studies, or practising some special branch of art. (*e*) Schools of art and their influence—(1) on the locality generally; (2) on manufactures and industry. (*f*) The relations between Schools of Art, Technical Schools, and Art Classes.

VI. Foreign methods compared: Primary and Secondary Schools, and Schools of Art in France, Germany, and Austria-Hungary. The Ecole des Beaux Arts and the Ecole des Arts decoratifs et d'Art industriel, Paris, and their influence.

Awards.

The following awards are tenable at this College:—

A Royal Exhibition worth £60 a year for three years, and free admission to lectures and instruction in approved College.

A National Scholarship worth £60 a year for three years, free admission to lectures and one or more Craft Classes, and such instruction in one of the Schools of the College as may be approved for the scholar. As a student of the College a holder of either of the above may become eligible for Royal College of Art Scholarship, 30 shillings per week and free tuition.

A Free Studentship admits for two years to lectures and instruction in one of the schools of the College.

Holders of the three foregoing awards have free transportation to and from London.

Local Exhibitions, to which the Local Education Authority contributes not less than £25, and the Board of Education not more than £25.

Art Teachers selected for Special Studentships, £60 a year and free instruction in courses to which they are nominated.

Four Junior Scholarships of £15 each and free tuition for one year only, to students who show special merit in their work during the session.

A Travelling Scholarship of £50 may be awarded annually in each School of the Upper Division, to the best student who has been at least four terms in the College, has spent one term in the School of Architecture (unless previously qualified in that subject), and has been at least three terms in the Upper Division of one or more Schools.

Students in receipt of maintenance allowances, who are specialising in one or two Schools of the College, may be allowed in their last term to do their own work in afternoons either in College or outside, and to take advantage of opportunities of establishing relations with manufacturers and others engaged in practical work.

Prizes of approved books, certificates of merit and a special prize of the value of £5 may be granted to students who show conspicuous ability.

Literary Course.

All students are required to attend the lectures of the Literary Course, to write essays on various subjects connected with the lectures, and to attend the French or Italian Classes held by the Lecturer, unless they already show a competent knowledge of either of these languages.

Lectures are delivered on Crafts, with special reference to the collections in the Victoria and Albert Museum, and on Costume, Armour, etc. The general history of Art is dealt with in a four years' course of lectures.

All students are required to attend the classes held by the Lecturer for the discussion of the subject matter of the lectures and for the revision of the students' notes.

Every student of the College is expected to execute a pictorial or decorative figure composition once a month as home work; the subjects are selected from the literature of the period which is being studied in the lectures. The compositions will be hung in order of merit and criticised by the Professor of Painting and Mural Decoration.

SECTION 2: VICTORIA AND ALBERT MUSEUM.

The South Kensington Museum was opened in 1857 by Queen Victoria and the Prince Consort, to whose foresight the whole scheme was largely due. In 1897 Queen Victoria laid the foundation stone of the Victoria and Albert Museum, which was opened by King Edward in June, 1909. Grants of money are made each year from Government funds for the acquisition of objects, and many very valuable gifts and bequests have been added to the treasures of this Museum.

The Circulation Department of the Museum supplies art schools and museums throughout the United Kingdom with the finest specimens of textiles, wallpaper, jewellery, pottery, and industrial art in its various phases. The unique and ample resources of the Victoria and Albert collection are drawn upon for the supply of some 200 art schools and nearly 100 permanent museums. Where but single specimens of articles exist or the articles themselves are too precious, replicas of them are made by a staff of skilled art workers employed in connection with the Museum.

Groups of students of the Royal College of Art study at appointed times in this Museum, under the guidance of the instructor of the Division in which they are working.

CIRCULATION DIVISION OF MUSEUM.

One of the primary objects, when the South Kensington Museum was originally founded, was the assistance to be given to the various Art and Industrial centres of the country by means of loans of objects and designs. From the earliest times this object has been kept in view, and loans are now made to Museums, Exhibitions, Schools of Art, and Art Classes in England, Scotland, Ireland and Wales.

Loans to Permanent Museums and Exhibitions.

Many of the cities and towns of the country have large permanent Museums and Art Galleries, and in connection with these application is made to the Authorities of the Victoria and Albert Museum for a loan of cases of art objects, such objects to comprise those which may be of use for design purposes for the various industries carried on in these centres. Such Museums after being inspected by the Authorities receive on loan floor cases (generally 4 in number) of art objects, which objects are changed every 12 months. For temporary Exhibitions similar objects are also lent, but naturally only for a shorter period. At the present time the Board are lending to no less than 95 permanent Museums.

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Loans to Schools of Art and Art Classes.

In the Circulation Division of this Museum there have been brought together nearly 10,000 frames of reproductions of art objects, in plaster, wood, metal, etc., together with designs—originals and copies—in connection with all the branches of industrial art; they are available for loan to the various art centres.

In connection with these loans, the Art Masters themselves, some weeks previous to the opening of their respective schools, call upon the Officers in charge of the Division, and consult with them as to the class of objects which could be lent. The Art Masters are then enabled to choose the various framed examples for themselves, each Master selecting according to the special branches which he is proposing that his students shall study during the ensuing term. Lists having been made of such selections, these are sent to the Schools of Art in the various parts of the country early in September and remain on loan for 3, 6 or 9 months, when the whole of them are returned to South Kensington.

There are also available for the use of the Masters, various series of lantern slides suitable for lecturing upon the industrial arts, together with a Library of advanced Art books.

Money Grant in Aid.

Parliament in 1881 voted a sum of £1,500 to be expended by the authorities of the Victoria and Albert Museum towards the purchase of reproductions, in plaster or by electrotype or other process, of objects illustrating architectural, ornamental, and other decorative Art, in sums amounting to not more than 50% of the purchase price of such objects as were approved by the authorities.

This vote is still continued annually, varying in amount from £750 to £1,500.

By this means the Committees of local Museums have been enabled to gradually build up sections of various Arts and Crafts, etc.

This system of aiding Museums by money grants has been carried on until the present time, and has been the means of encouraging the Local Museum Authorities in the improvement of and addition to their Museum of objects of Art.

SECTION 3: ART INSTRUCTION UNDER LONDON COUNTY COUNCIL.*

The scheme of work in schools under the London County Council is carefully organized with a view to giving proper instruction in art from the beginning of the subject in the Infant Departments to its development in the very specialized work of the great Art and Technical Art and Craft Schools and Colleges. Young children spend the maximum time at this subject compatible with their general education, and those showing ability receive special attention. Any child showing marked talent has its art education developed along practical

*Condensed from paper by Mr. A. C. Christie, Chief Inspector.

lines, without neglecting its general education. Children on leaving school are encouraged to attend evening classes, and through these to pass to more advanced studies, which latter must be so arranged as to co-ordinate the claims of art, commerce, manufactures, and above all, education. Such is the problem, in the solution of which the Council is constantly adapting its machinery to new circumstances.

In Elementary Schools—lower, intermediate and higher—all children spend a stated time each week in drawing, either under their ordinary teachers (who are required to have some knowledge of this subject), or under specialists giving their whole time, who take the classes in succession in a specially equipped room. In some schools a "peripatetic" art teacher takes classes of the best children on certain days, thus ensuring special teaching for those children who can profit by it.

Drawing in Infant and Elementary Schools.

The work of the infants' schools is often very bright and interesting, showing wonderful observation and imagination. As much work as possible in all classes is done from nature, simple and familiar objects being used, and drawn from sight and memory, the latter work forming an important part of practice. Drawing to scale from measured objects, geometrical drawing and elementary design are also included. In some Elementary Schools careful modelled work from plants, shells, etc., is done, of which photographs are shown, and there is also a small selection of typical sets of drawings made in connection with the wood and metal work manual training workshops of Elementary Schools.

Drawing is taught in the "special schools" for children mentally or physically defective, and is regarded as a useful subject for this type of child, much interesting and intelligent work being done. Scholarships giving free education and travelling expenses are awarded annually to crippled or deaf and dumb children, tenable at Art or Trade schools, thus enabling such children to learn a trade suited to their capacity and health.

Special scholarships are awarded by the Council to clever pupils who proceed to Art and Craft schools, and a certain number go on to Secondary Schools.

Teacher Training.

The majority of these scholarship holders intend to take up teaching. The Secondary School art course is but a poor equipment for art teaching, and many students take a further course and pass the Board of Education examinations, either from the Training College or from Evening Classes or special School of Art classes.

Special classes are held during the winter for elementary school teachers, and are attended by large numbers, women teachers especially appreciating them. These classes particularly appeal to the teachers of infants' departments and boys' and girls' schools, a careful series of studies being made from plants and real objects in colour, chalk and charcoal, and a certain amount of design and copying being taken, in addition to elementary drawing.

The permanent and "peripatetic" teachers are well fitted for their work, being Associates of the Royal College of Art, or holding the Art Master's certificate. Many are professional artists or designers who spend four or five mornings or afternoons a week teaching. Some of them have charge of evening continuation art classes.

Evening Art Classes.

These are of two kinds—the ordinary "drawing" class for children and young people in business, preparatory to more advanced work; and the evening Art Centres, at which the work is fairly advanced, many of them being largely attended. The work covers all the elementary School of Art subjects, with a few craft subjects such as embroidery or wood-carving, and the object is to provide for students between the age of 14 and the time of their taking up some definite line of work in one of the Evening Art or Technical Schools. They are held in Elementary Schools, and thus form a link with the Day School, making it easier to draft the children into them. Once they have acquired the habit of evening study, they go on to the Art and Craft Schools. All evening courses are closely co-ordinated, and the Art Centres and drawing classes brought into close connection with the schools to which they send their more advanced students.

Art Work in Secondary Schools.

Secondary Schools in Great Britain are not necessarily supplementary to the Elementary Schools, but rather parallel to them, only going on further and being intended for children of a better social position. They are differentiated by the fees charged. Schools are specially organized to provide commercial, technical or craft education. The art work in Secondary Schools is somewhat similar to that of Elementary Schools, but of much wider scope. A great deal of very interesting work is in progress, sometimes frankly experimental. The syllabus of all types of Secondary Schools includes drawing from plants, from nature and natural history specimens, and from all kinds of objects, in pencil, colour, chalk, and pen and ink. The boys do special exercises in drawing and geometry in connection with their wood and metal work, and the girls sometimes do embroidery from their own designs, made under the Art Master's supervision, the art class work and needlework being co-ordinated.

Drawing from prints and photographs or casts of ancient tiles, tapestries or carvings is practised; photographs of architecture and sculpture are looked at, drawn and discussed; and exercises in lettering are done from Roman and Gothic models. This work is sometimes co-ordinated with literature, selected passages being written out and decorated, but writing has not yet come under the supervision of the art teacher. Simple geometrical designs are worked out and coloured, and more elaborate designs, either conventional or with naturalistic or floral ornament derived from models in museums, are produced in considerable quantities. Original illustrations of literature lessons are attempted

and little figure sketches from life, of fellow pupils, are made in pencil or colour. In short, the child is introduced to as much Nature as may be, and encouraged to see what is interesting in ancient Art, both from the artistic and historical point of view, this part of the course being sometimes closely co-ordinated with history.

Schools with Artistic Bias.

Most schools have a properly equipped art room, in many cases excellently furnished, and containing carefully selected photographs, casts, and coloured reproductions, collections of shells, butterflies, etc., and plentiful flowers and foliage, an admirable and most stimulating environment.

In some of the boys' schools, the drawing syllabus shows a distinct technical bias, and includes architectural or machine drawing, more stress being laid on it than in schools of the commercial type. Some Secondary Schools, not of a general technical type, provide a course in some definite craft for boys who are for the most part scholarship holders from the Elementary Schools. Such schools as the one for cabinet-making give boys not only a considerable general knowledge of the craft, but also of actual practical work. Their general education is made subservient to the special subject, attaining a practical value and interest thereby that are remarkable. There is a special school on the same lines for silversmithing, and similar schools for girls prepare them for dressmaking and upholstery.

These technical schools are very interesting from the Art point of view, for here a large number of young people take a practical interest in a definite form of Art; placed at a susceptible age under well-trained teachers who are not only skilled craftsmen, but thoroughly conversant with the requirements and practices of trade, such instruction provides a very valuable preliminary education for an apprentice or learner in a workshop. Usually the student, on leaving the day school, continues his studies in one of the evening Technical Art Schools.

Art and Craft Schools.

The work of the Art and Craft Schools and Colleges is very varied. Their classes are rather sharply divided into day and evening courses, attended for the most part by different students. Although some day students stay for evening work, the great majority of evening students are employed in the crafts or arts in which they seek further instruction, and the teachers usually are also engaged in the crafts, being carefully selected men, not only competent in their crafts, but to teach design. The classrooms, equipped like workshops, are decorated with casts, photographs and other reproductions of ancient and modern work. In all craft classes the traditions of design are preserved, and students encouraged to look out the work of old masters preserved in museums, churches, etc. The Council awards prizes for the best sets of museum studies submitted, these serving as useful examples to other

students in schools or workshops. This craft or trade side of Art has claimed the very careful attention of the Council for some years, and there are evening classes in a very large number of subjects. Besides the schools devoting themselves to one branch of work, such as building, photo-engraving, and lithography, all Schools of Art have trade, technical or craft classes. Whenever any concentration of a trade in a given locality renders it possible, a school dealing with that work alone is provided.

A large number of scholarships of different values are awarded each year in the Art and Craft schools. The awards are made on actual work done during the session, in order to avoid the evil effect that preparation for a set examination would have upon vitality and individuality.

In the Schools of Art, painting and sculpture are taken by whole-time day students attending courses of several years, who are prepared for careers as painters, sculptors, decorators, teachers, book-illustrators, and the like. There are also plenty of evening classes for life drawing and modelling, and for other School of Art subjects, attended by craft students who can only spare the evenings.

A few typical Art Schools in London are briefly noted in the following pages.

CENTRAL SCHOOL OF ARTS AND CRAFTS, LONDON.

This School at Southampton Row, near the British Museum, was established in 1896 by the London County Council to provide instruction in those branches of design and manipulation which bear on the more artistic trades. The Principal is Mr. W. R. Lethaby, F.R.I.B.A., Professor of Design in the Royal College of Art.

Admission to this School is, within certain limits, only extended to those actually engaged in handicraft, and every opportunity is given to students, to specialise in relation to their own particular calling. The school is intended to supplement, rather than supersede, apprenticeship by affording to students, engaged in the typical London art industries, opportunities for design and practice in those branches of their craft which, owing to sub-division of processes of production, they are unable to learn in the workshop.

The instruction given falls into the following main groups:—

Architecture and the Building Crafts, including architectural drawing and design, lectures on history of architecture, building construction and structural mechanics. Practical courses in stone and wood carving and lettering, iron work, bronze casting, etc., are associated with this section and with the Modelling School.

Silversmiths' Work and Allied crafts, including silversmithing, large and small, goldsmiths' and jewellers' work, diamond mounting and gem setting, art metalwork, chasing, repoussé work, engraving, die-sinking, design, modelling, metal-casting, enamelling and later, electro-deposition and gem-cutting.

Day Technical School for Boys preparatory to the Silversmiths' and Allied Trades.

Book Production, including book-binding, typography, black and white illustration, writing and illumination, lithography, woodcuts and wood engraving, miniature painting, etching and mezzotint, and courses of lectures arranged with a view to bringing into closer relationship the various branches engaged in book production.

Day Technical School for Boys, preparatory to book production (Printing binding, etc.)

Cabinet Work and Furniture (third floor), including cabinet work, inlaying and marquetry, polishing, upholstery, wood carving and gilding; also design for furniture, workshop drawing, workshop arithmetic, perspective and interiors.

Metalwork for Cabinet Makers.—Facilities are given in connection with the class in *Art Metalwork* to those students who require to design and carry out handles, scutcheons, hinges, etc., for their work.

Drawing, Design and Modelling, including Life and Painting on China. This group is in close relation to all the other groups.

Needlework, including dressmaking, embroidery, etc. Tapestry and silk weaving are added if sufficient applications are received.

Stained Glass Work, Mosaic and Decorative Painting, including painting in tempera, etc.

THE ROYAL FEMALE SCHOOL OF ART.

Incorporated with the Central School of Arts and Crafts.

This school, established in connection with the Board of Education at Queen Square, Bloomsbury, in 1842, was transferred to the London County Council in 1908.

The course of study is intended to train young women who wish to obtain their livelihood in some branch of Art or Art Craft, or to become Art Teachers in Art Schools, Secondary, Elementary, or Private Schools.

Students are thoroughly prepared for the examinations of the Board of Education in May and June, for Elementary Certificate, Art Class Teachers' Certificate and Art Masters' Certificate, Examinations in Drawing, Perspective, Anatomy, Design, Painting, Drawing from the Antique and from Memory, Life, Modelling, Ornament and Figures, etc.

Two Pupil Teacherships are awarded annually, of the value of £15 and free tuition.

Free Studentships for one year are granted to all students who obtain the First Certificate, Art Masters' or Art Class Teachers' Certificate.

Students are prepared for admission to the Royal Academy Schools by careful study from the Antique and Life, and for the Entrance Examinations of the Royal College of Art, South Kensington.

Day classes in Arts and Crafts cover work in addition to the above, in Black and White and other illustration; Lithography, Writing and Illuminating; Miniature painting; Etching and Mezzotint; Carving and Gilding; Embroidery; China painting.

Visits are made to the Victoria and Albert Museum, South Kensington, under the guidance of teachers, and lectures on various subjects connected with artistic crafts are delivered during the winter months.

THE SCHOOL OF PHOTO-ENGRAVING AND PHOTOGRAPHY.

Fleet Street, London.

This School costs the London County Council nearly £3,000 a year to maintain. It is open only to those engaged in some branch of the photo-mechanical, photographic, designing, lithographic, engraving, printing and illustrating crafts. There is no provision for amateurs. It supplies cuts to the 6 Printing Schools in London, but does no commercial work, and must not even prepare plates for the County Council. It is the only School of its kind under the London County Council, but there are other similar schools at Manchester, Liverpool, Leeds and Glasgow.

The Courses of Study cover Block Proving, Elementary Photography, Photographic Copying, General Lithography, Map and Plan Drawing, Transfer Writing, Design, Lettering, Drawing, and all Photo-Mechanical Processes.

The Equipment is all first-class. The aim of the School is to acquaint students with all appliances used in good establishments, so that various machines, all arriving at the same result, may be seen in operation.

The Art section of the school should be of especial service to those artists engaged upon work for reproduction, as students in these classes have the privilege of having selected work reproduced, and every opportunity is afforded them of obtaining a knowledge of the various processes and their limitations.

Unemployed members of the craft register at the Labour Exchange and then come to this School to improve themselves, without fee, while waiting for a job.

There is a Sketch Club, the boys doing the work at home, and having it criticized once a month by some distinguished artist.

A large book of finely-executed specimens was obtained by the Commission at this School.

CAMBERWELL SCHOOL OF ARTS AND CRAFTS.

This School is carried on by the London County Council in a beautiful building erected by Mr. Passmore Edwards, and is strong in artistic work in Jewellery, Typography, Bookbinding and Illustration, Architectural Design, Modelling, etc.

Here about 600 evening students and half that number of day students are taught by experts.

Fifty printing apprentices attend for two afternoons weekly, the employers paying for their time and the School recouping their travelling expenses.

A feature of special comment by our Commission was the teaching of special drawing and design in the evening class in typography, pupils being taught to draw letters in pen and ink and arrange them in tasteful orders, and also to design simple ornaments. This work has great effect in giving printers ability to set "display "type to advantage.

SECTION 4: PROVINCIAL SCHOOLS OF ART.

The work of students of Provincial Art Schools goes to London for the National Competition. The Headmaster is supposed to send nothing up for competition but what he considers work of excellence. At one time everything done was sent up, but now all preparatory work is excluded and only specially picked work is allowed to go.

The prizes go to individuals, the institution not getting the credit; but the awards substantially influence the grant from the Government. In a measure the variableness of the amount depends on the competition. A Government Inspector resides in the district and may visit the Provincial School any day in the year and make inspection. There is also a rather serious inspection triennially when half a dozen Government officials go down for a few days and see the actual work going on in the schools. Formerly the grants were paid on the basis of what the pupils did under examination. Now block grants are paid on the general character of the work of the School.

The work of Schools of Art, in the opinion of Mr. Haywood Rider of Leeds, has undergone an enormous change, mainly in making the work more practical—what is called Craft Work. These schools are just beginning to make themselves what they were really intended to be when started 60 or 70 years ago. Formerly everything was done on paper, and the Government seemed to think the work would find its way from the schools into the industries through that channel. It did not do so. Work today must be actually practical, and if such work is not taught from the beginning, the student will not attend. There is so much competition that if not shown that his trade will be influenced he will take no interest in it.

Value of Art School to Industry.

Schools of Art are now recognized on every hand as a very important item on the industrial side, and their use is recognized by everybody as helpful in every way to the general public and manufacturers; this Mr. Rider could observe was increasing every day.

The substance of further information obtained by "conversation" with Mr. Rider is as follows:—

There is no line of demarcation between students who come for efficiency in the fine arts, such as painting and sculpture, and those who come for application of beauty to crafts. The number of students in fine arts is gradually decreasing; and because the practical spirit is in the air, the fine art type of student does not exist today as he did in large numbers 10 or 15 years ago.

The authorities in charge of these Art Schools feel that they are chiefly responsible for the development and maintenance of the esthetic sense in their communities. There must be some responsible person to see to questions of taste and good design, as these cannot be got in many cases from men of general training. The question of taste ought to rule very largely in all Art work in a new country like Canada, which it will affect more than it would an old country like England, which, because of its traditions, has to be always looking back and not forward. Those who are responsible for Canadian Art must be very keen in watching for the development of taste.

Mr. Rider thought there was not enough dwelling on the past in order to maintain a high standard of taste. We must go to the past and dig up the best and make use of it. That is so on all hands. On the question of taste it would be better for Canadians to keep their money in their pockets than to encourage any form of art that would lead to anything that was not really sound. He did not know whether the Dominion would get a lot of art that it would be better without—very vicious and very nasty—or whether they would get something worth having to put into the Canadian industries. This was really the most important aspect of the whole problem. Better shut out art altogether than give way in the matter of taste. "Better keep your money in your pockets than spend it on bad art; that is all devilish".

(1) INDUSTRIAL ART IN LEEDS.

The entire scheme of art instruction in Leeds is logically arranged, from primary to professional work, and is very strong throughout in insistence on fundamental principles and sensible practice; close relation to industries; correlation of exercises, material and methods towards industrial utility combined with beauty. Manual training, Botany and Nature Study are utilized for and permeated with instruction in the principles of Art. The teachers have evidently ability as well as enthusiasm, while the Principal of the Central School of Art, Mr. Haywood Rider, A.R.C.A. (London), has a merited reputation for exceptional strength of character and tenacity of purpose.

Great importance is attached to the course of instruction in the Preparatory and Branch Art Schools. In the former (held three evenings weekly) the study is based on examples having vitality and interest, so as to stimulate and encourage beginners to further progress. These courses lead to more advanced instruction in Art and in the allied crafts as given in the Central School of Art. Students are not allowed to produce works for the adornment of their homes or the delectation of their friends. They are expected to follow a course of serious study which will serve as the ground-work for their future advancement in Art and its applications to industry.

The connection of the art work in Branch Schools with that of the Central School of Art is aided by occasional special exhibitions of advanced art or craft work in the latter, and by lectures and demonstrations by the Principal and teachers of the Central School which students in Branch Schools are allowed to attend.

Examples of advanced work done by pupils in the Central School are loaned to Branch Schools so that high ideals and a high standard of accomplishment may be constantly before the students. By bringing out clearly the connection between the Branch and Central Schools it is hoped that students may realize and appreciate the possibilities of advancement in Art Work offered to them, and that by thus securing definition of aim and continuity of purpose distinct benefit may accrue both to the individual and to the city.

Central School of Art (Leeds).

This school, devoted to the training for art application to industries, plans in every possible way that all study shall lead to some useful and practical end. In order to accomplish this, every facility is provided, so that side by side there shall be not only study in Principles, Draughtsmanship and Design, but that these shall be applied in a practical way in the Craft Studios of the School to the various Art Handicrafts and Industrial Arts.

Students are desired if possible to take up some branch of Craft Work so that they may realize the application of their particular studies to practical work. The importance of a thorough understanding of both the design and craft sides cannot be too highly estimated, and it is only by a knowledge of craftsmanship that the artist can hope to design suitably to the purpose in hand.

In the case of Cabinet-making, Bookbinding, and other technical subjects, the aim is to give the student a thorough grasp of every part of his trade or craft.

The Departments are: Architectural, Design, Modelling, Life Drawing and Painting, School of Instruction in Primary Drawing, and Various Craft Schools.

The curriculum embraces all the requisite subjects in these six Departments, and in conjunction with them equipment and instruction are provided for the following Crafts:—Bookbinding, Cabinet-making, Embroidery and Lace, Enamelling and Jewellery (including Repairs), Lithography, Mural Decoration, Pottery, Painters' and Decorators' work, Metal work, Wood and Stone Carving, Illustration work (all modern processes), Wrought Iron work.

Practically no qualifications in regard to ability to actually draw are required on the admission of students. As a rule the school does not get them under 13 or 14, and nowadays people can draw passably the preparatory things. Students aged 17 or 18 who do not have that ability are admitted. There is no entrance test by examination; students are on trial for three months, and if they show no artistic ability they are then turned away.

Night students pay 7s. 6d. a term for three terms a year. In some instances fees are paid by employers, who will act generously if they see that the school can help their people practically; at present about 36 pupils are having their fees paid.

INSTRUCTORS, CRAFT-WORK, EXHIBITIONS, ETC.

The instructors are successful craftsmen who have had teaching experience. Mr. Rider considers them of little use if they are simply craftsmen. Their

teaching power is helped by the experience they gain at the school, for as the students do not require much discipline, and their general art training is sufficiently advanced, they only need the technique to be shown them. A technical man always works alongside the design master and the general masters. The Comission found that the teacher-in-training in iron work had been awarded a travelling scholarship by the Leeds Committee, after he had won a prize in London, and had thus been enabled to go to Spain, where there is a great deal of beautiful iron work *in situ*.

In the jewellery department young girls, just emerging from the elementary schools, were doing fine work from their own designs.

The printing department is well equipped, having 200 point-type faces, and 2 tons of lead altogether, all this being on loan from Haddon & Co., type founders. Lectures are given to 300 printers in the Assembly Hall.

Art pupils submit designs to employers, and profit financially by exhibitions. Clay-modelling pupils have to copy a cast, and in a specified time make a cast from it for educational purposes. The various departments design Christmas cards, which are printed and sent out to people in the district likely to be interested in the school and to help it.

The support of the School of Art began with the art-loving people, backed by the Government, but now the municipality are responsible in every way, and they are very steady in support, sympathy and interest; yet in actually carrying out much of the detail work there is always a certain section of art-loving people who do a big share.

Mr. Rider, referring to the National Exhibitions, said he did not think the winning of scholarships had any influence on the management to exclude students other than those specially bright.

The lithographic has been developed a good deal in Leeds; the standard has been raised by the Art School. The Jewellery department of the school is very strong; so with bookbinding. The Art School authorities have many talks on the question of designing furniture on simple and artistic lines for workmen's homes, showing how it can be done cheaply and yet tastefully.

TRAINING OF TEACHERS, RESEARCH, ETC.

Special courses, running two hours twice a week for two years, are given to teachers who are to take art classes in the Elementary Schools of Leeds. The teachers pay fees, and appreciate it better, there being twice as many applications as can be taken, and a better quality of work done. The better the teacher is qualified, the better chance he has of work. In exceptional cases an increase of £5 or £10 is given for all-round ability. One teacher from each school is selected, and thus the influence is spread to all. A teacher taking an Art Course at this school would be the leading one in a conference on Drawing, and thus the influence of the school is reflected all through the city.

The Leeds School of Art cost in 1911, £4,825, of which £2,737 was for salaries. Against this the Government grant was £1,680, local rates £1,713, and fees from pupils £1,295. Of the latter sum, students themselves paid only

£478, the Leeds Education Committee gave (in scholarships) £795; the balance came from other public bodies.

There is a growing use of this school as a research laboratory by manufacturers for fine designs for things they are making. Only the day previous to the Commission's visit Mr. Rider had a designer in a firm of textile printers come for an assistant, and it is a regular thing to receive applications for either designers or workpeople.

Advisory Committees in every trade are in close touch with the school and behind the regular departments; they are made up of employers, foremen and actual workers in shops, each representative being selected by his colleagues. These Committees meet with the Board as often as required.

This School of Art has assisted in the development of existing industries, and both employers and workpeople show by backing it up that it is a great help to them.

West Leeds High School.

The art work in this school is conducted by Mr. F. G. Boase, A.R.C.A., who co-operates with Mr. Osborne, the Manual Training teacher, and together they produce very fine results, all the wood work being saturated with artistic ideas.

Mr. Boase said he never had any trouble in handling the pupils, although he gets 400 every week, because they find the work so interesting. He has never yet had to turn one out of school for inattention or bad conduct.

Mr. Boase keeps constantly on exhibition on the wall of the art room fine specimens of work by the Old Masters, and gets the boys to bring prints. Pupils' work is also selected, and the best specimens are shown on the walls. He also arranges for the art critic of the "Yorkshire Post "to conduct the students through the art galleries and talk to them about the pictures, and when the boys return they give a report on what they have seen. Art compositions by the boys are put into a MS. magazine conducted by them. Between 300 and 400 specimens of home work are done spontaneously, no marks being allowed for this.

This school gets 8 scholarships for the Leeds Central School of Art; then students go from there to the Royal College of Art in London. Eight former students are now employed in the arts.

Art work is related to needlework by close consultation with the teacher of that department, and Mr. Boase keeps in personal touch also with the evening school.

MANUAL TRAINING DEPARTMENTS.

Mr. Osborne uses "models" at first in order to give control of the hand, and for foundation work, but he does not insist upon absolute accuracy; to do so he says, would be to deaden feeling, and what he wants is spontaneous action. He relates the wood work to the activities of the school by making articles the school needs, and relates it to the home by allowing the children free play. He is strong on art.

Mr. Osborne appoints one boy as foreman over 6, and they do a great deal of communal work. The tools are kept in lockers, to which the boys have keys; the tools include surveying instruments, sight markers, etc. The boys were making aeroplanes at the time of our visit.

(2) MUNICIPAL SCHOOL OF ART, MANCHESTER.

The objects of this School are to give, by a system of carefully considered and varied courses of study, with due regard to the bent and capacity of individuals, a thoroughly practical knowledge of Designing, Drawing, Painting and Modelling, more especially in the various forms of their ornamental application in association with Architecture and the technical conditions of manufacture. It offers not only a useful elementary training to those without previous knowledge of Art but also a helpful system of study sufficiently complete to be valuable to both designers and craftsmen, as well as to those who desire to pursue design in its more strictly graphic and pictorial directions. A further object is to assist those who desire to make a knowledge of Art a part of their general education; also to give facilities for the training of persons who intend to adopt Art as a profession, or to include it in their qualification as teachers in public elementary or other schools.

The Courses of Instruction comprise an Elementary Course, Painting, Modelling, Figure Drawing, Painting and Composition, Architecture, Design, Classes in Art Craftsmanship, Metal work, Enamels and Jewellery, Wood Carving, Embroidery and Stained Glass. Both Day and Evening Classes are held.

Museum of Art and Handicraft.

A Museum in connection with the School, founded by a gift from the profits of the Manchester Royal Jubilee Exhibition of 1887, comprises three large rooms equipped with characteristic objects of artistic skill or handicraft, either original or in fine reproductions. This fine collection is at the service of the students and public, and forms a Library of Applied Art such as is not available to the students of other Provincial Schools. The three rooms are designated as the Textile Court, Gothic Court and Italian Court. The first contains a tapestry designed by Sir Edward Burne-Jones and executed by William Morris, a typical collection of Turner drawings, cartoons for stained glass windows, Greek vases, glass, reproductions of early work, medals, coins, etc., and other art treasures. The Italian Court contains illustrations and specimens of Italian Art; the Gothic Court, casts and reproductions of early Runic Crosses, Gothic Architecture, and similar work. There are also collections of majolica ware, pottery (ancient and modern), glass, Chinese porcelain, Japanese colour prints and bronzes and other Oriental work, as well as specimens of famous modern pottery such as Wedgwood, etc., and modern textiles.

Library Lectures, Prizes, Etc.

There is a reference library and reading room.

Series of free illustrated Lectures are delivered to craftsmen, teachers and others during the session. Such subjects are treated as:— Art Education in Elementary Schools and Schools of Art; its relation to general education and industries; the functions of a School of Art Museum; the art of the craftsman in various kinds of craft work; the training of the craftsman; relation of the art school to the workshop; Drawing as a means of vivid illustration, and its application by the teacher.

Design is taught in its technical applications; plants and animals are studied in their relation to design, and drawn and coloured from nature for design. There is a course in Furniture and Interior Decoration. Special courses are given on Saturday mornings to teachers in elementary schools; Marble Carving is taught to advanced students.

There are numerous prizes in all departments, and Scholarships are also awarded, one being a Travelling Scholarship. These scholarships are provided partly by private gifts, partly by the Board of Education, and partly by the Governors of the Royal Manchester Institution.

(3) ART TRAINING IN LEICESTER.

The Art Department of the Leicester Municipal Technical and Art Schools is well equipped, staffed and managed.

This school has worked for some years by teaching and lectures to raise public interest in Civic Art. Keeping in mind the recently passed Town Planning Act, it hopes through students preparing as architects and builders to develop good taste which will manifest itself in the building of chimneys, bridges, terrace houses, allotment garden houses, lamp and tramway poles, and the like. It is considered possible under the new Act to do much towards conserving desirable things and preventing undesirable planning and building. The School keeps a sharp eye on changes in the locality, and calls attention to alterations contemplated in the neighbourhood of the School in the hope of developing these, as well as the approaches and surroundings of a proposed new park pavilion, into striking and beautiful points of interest. Attention is also drawn to the increase of aggressive advertisements which have in many cases destroyed the beauty of the town, neutralizing the esthetic effects of the fine architecture, besides being poor in design and causing untidy litters. These things, the Principal points out, dull public interest in civic betterment and discount private efforts to improve the city's appearance.

The continued endeavour to focus the art work on practical issues has given additional life and value to the courses of study in each department of the School. Without losing sight of the value of preparatory, and to some extent of academical exercises, the educational opportunities afforded by processes of practical work have been developed.

Special Museum Features.

The School Museum is a special feature here. The practice is for the examples, and framed specimens exhibited in the school corridors, to be used to illustrate a particular subject, such as the history of sculpture and architectural ornament. Beginning with Japanese work, a series of photographs and casts illustrates the development of sculpture up to the present time. A pamphlet with notes on the exhibition was printed and circulated. Apart from the value to the general art student of these annotated and easily understood picture sequences, a large number of the general public visited the exhibition, and thus their taste was improved. A large number of drawings done during the summer vacation by students of Secondary Schools, forms part of the exhibit at the Museum.

About 800 pupils of city schools visited the exhibition, and one or more members of the Art School staff went around with them and in an informal way helped to make clear the interest attaching to the exhibition. On one occasion the exhibition consisted of a collection of exercises selected by the Japanese Government for the purpose of showing art work in the various grades of the Japanese schools: this work being different from that done in Leicester was useful for purposes of comparison, and as illustrative of technique was perfect within its limits. The school has also had the benefit of a selection of designs and studies which had been awarded medals and prizes in London at the National Competition of Schools of Art. Besides drawings and casts, this selection included industrial work of various kinds, and the students thus had an opportunity of seeing what other centres were doing and of appreciating the standard to which the work had been raised.

An illustrated pamphlet was issued containing drawings made by students of the school relating to the Leicester Coat of Arms, notes being added by an expert in heraldry. These notes and drawings have long been wanted by printers, painters, etc., who use copies of the Borough Arms.

Courses in Close Relation to Trade.

The courses of study are arranged so as to follow in a definite manner such local industries as lend themselves to the influence of the school, and there is evidence of the beneficial influence it has had upon them. An important factor is the connection existing between certain local trade organizations and the school.

The complete course of training given in the Lithographic Artists' class, after a careful selection of boys, well taught in the elementary schools, leads to the supply of apprentices who, by reason of their training, will improve the general standard of the work.

Steps are being taken to secure youths who have a good school education to become compositors and printers in order to compete with the recent distinct advance in artistic printing evident in the productions which American and German firms are now offering in England.

The curriculum provides educational facilities for students who can be divided into three groups—Art workers, teachers, and students who take Art as part of their general education. Suitable courses of study are arranged, varying in a convenient manner for such local industries as can be dealt with at the school. There is an Art Course for Secondary School pupils, also one for those who have left school. Courses are given in all these subjects in Evening Classes. In connection with the Art schools, there are many scholarships given, in some cases supplying free tuition, in others involving maintenance running from 5s. to 25s. per week.

The pupils correlate design in connection with the trades. Engineering and boot and shoe students in the Technical School, in the same building, take some freehand drawing. Sign painting is treated as a speciality.

Specimens of printing and lithographic work from this school are very fine.

Metal work, embroidery, architecture, modelling, stonegraving, letter cutting, painting and decorating and sign writing, wood engraving and furniture design are all effectively dealt with.

Art education is given to the pupils through processes of practical work.

(4) BRADFORD SCHOOL OF ART.

The objects of the school are; (1) To train students who desire to follow the profession of artist, architect, designer or teacher of art. (2) To train students who are engaged in, or intend to follow some art trade or craft. (3) To give a general art education, as a means of culture. The school emphasizes the application of art to local industries, especially textiles.

The day course for artists, designers and teachers includes: freehand, model, geometry, perspective, light and shade; painting, design; drawing, painting and modelling from the human figure; drawing and painting flowers, and adapting them to the purposes of design.

The classes for the Training of Teachers include lectures on methods of class teaching.

The Architectural Course is arranged in conjunction with the Department of Engineering, and includes drawing and sketching from casts and objects; drawing architectural details, such as mouldings, windows, doorways; perspective; measuring buildings of architectural importance; study of historic architecture, Greek, Roman, Byzantine and Romanesque, Gothic, Renaissance and Jacobean; architectural design; geometry; building construction; mathematics; physics; levelling and surveying; graphic statics. Students are trained for the R.I.B.A. examinations.

Artistic Trade or Craft Classes.

The Day Course for Students, who are apprenticed to or who intend to follow some art trade or craft, includes drawing, modelling, design, and special instruction in the practical part of some particular trade, including textile design (the practical part being taught in the Department of Textile Industies),

painting and decorating, wood-carving, lithography, metal work, furniture, plaster casting, etc. Most of these classes are taught by teachers who have a practical trade experience of the craft. Students may be apprenticed to an outside firm and attend half days during the week, or may learn the whole of the craft in this School, working half day at drawing and design and the other half at practical work. The classes are free, but students must give evidence of ability before being admitted. At first only students employed in the trade were admitted to these trade classes, but sometimes the attendance would fall as low as 5 pupils, hence the door was thrown open; but if craftsmen fill the capacity of the class they always have first chance.

Evening Class students engaged in an art trade take courses intended only to extend the knowledge gained in office and shop work, this course being necessarily more restricted than the day course.

All students in Textile work at the Technical College come here for instruction in design. Students from Secondary Schools attend for instruction in Art.

The Principal of the School is Charles Stephenson, A.R.C.A. (London), Gold Medallist and Travelling Scholar of Royal College of Art; Royal Academy, Antwerp; joint author of Text Books for "Geometric Construction" and the Principles of Artistic Design, viz. "Ornamental Design for Woven Fabrics." The Staff has teacher specialists and lecturers on Figure Drawing and Composition, Architecture, History and Design, Decorative Art, Textile Design, Embroidery, Wood and Stone Carving, Lithography (theory, artist and machine courses), Photo-lithography, Chromo-lithography, Typography, theory and practice; Cabinet work (lecture and practical.)

There are practical workshops in Cabinet-making, Painting and Decoration, Typography and Lithography.

Courses in Lithography.

In chromo-lithography the course extends over 3 years. The first year is spent entirely at the School of Art; then the student should become apprenticed to the trade, and may continue to attend the School of Art one half of each day for two years. For the remaining period, or last 3 years of his apprenticeship, he should attend the School of Art at least three evenings per week. All necessary material, including a large selection of lithographic stones, is provided for use of students in the practical class.

The Evening Course is so planned that it will serve both for apprentices and those who have passed through their apprenticeship. An additional feature is introduced into this class by making use of the new Photo-Lithographic section. The artists' tone and colour work is reproduced by photographic processes and made ready for the lithographic printer. In this way the artist is able to see the result of his work done by this method. All necessary material, including a large selection of stones, is provided for the use of students. The work done will be proved in the machine class, thus enabling the students at any time to see the result of their work.

These classes in practical lithography, machine printing and photo-lithography being entirely technical ones, only such students are admitted as are engaged during the day time as apprentices or journeymen.

A number of boys in the lithographing department are sent by their employers, who pay them for the time spent in school.

Students must take a full course and pass an examination in each subject before being permitted to enter the following year's course, exceptions being allowed only in case of advanced students, who may take special subjects only.

To meet the requirements demanded by changes and advancements taking place in the lithographic trade, both as regards the artist and the printing departments, the class in photo-lithography gives students in these two departments the advantage of studying the combination of both processes. A photographic studio has been arranged alongside of the lithographic rooms, containing exposing room and dark room, the former fitted with a large half-tone camera and screens, two special arc lamps for exposing and printing, and apparatus for wet and dry negative making. The developing room is fitted with three tanks and other necessary apparatus. Only the older students and journeymen lithographic printers with practical trade experience are allowed to do practical photographic work.

The lithographic workshop is provided with a power press, several hand litho-presses, a copper-plate press, and all other necessary appliances required for the practical working of a lithographic workshop. The class is taught by demonstrations on the power press, and by individual students making practical experiments on the hand presses, also by occasional lectures on methods of procedure, the nature and quality of materials used, and various uses to which they can be put.

Courses in Typography.

In Typography the course is divided into 3 years. Only compositors' apprentices and past-apprentices are admitted. The class room is furnished as a workshop, and contains type of all varieties for high-class printing and display work, also press and all necessary material. Theory and practical work are combined into one course, and students taking the practical work are also required to attend the theory lectures. The courses cover (1) composing for book and job work; (2) press and machine work (single cylinder), manufacture and care of inks; imposing stereotype plates; treatment of paper before and after printing; keeping stock; folding, stitching, stabbing and sewing, etc.; (3) machines—two-revolution, perfecting and rotary; typesetting machines; book-keeping for printers; general management, estimating, etc.

Students are urged to take a course of freehand drawing with the design class, to enable them to sketch out their own designs for display work; also to attend an evening class for grammar and composition, these being most essential subjects for a compositor to understand.

Painters and Decorators.

In Painters' and Decorators' work, the Apprentice Class, only for day students over 14, is for the purpose of training, in the technique and art of the trade, youths intending to become apprentices to the trade. The class is free to such a student, who enters directly from a day school and is taught both the art and craft of the trade by attending the special Painter-Decorators' Class during the whole of the day for one year.

Students passing the course satisfactorily easily obtain places in the best shops in the city, as applications are constantly made for apprentices. After obtaining a place as apprentice a boy may, if his master consents, continue at school one-half of each day and three evenings per week, working the other half of each day in his master's workshop.

All students must attend the Evening Classes three evenings per week throughout their apprenticeship, and are permitted to continue as Free Students.

The course consists of instruction in painting, graining, marbling, lettering, gilding, designing for decoration, stencil cutting, drawing. The class work is carried on in a large and well equipped workshop, the wall space of which is used by the students for practical work.

The Evening Class is open only to those working in the day time as apprentices or past-apprentices. Students must take the full course, which comprises lectures on tools and brushes; pigments, oils and varnishes; painting, distemper, paperhanging, gilding, bronzing, graining, marbling, staining, decoration, sign-writing, etc. The course covers three years.

One feature observed by the Commission was the painting and decorating and applied design instruction, the work being very remarkable.

Cabinet Makers' Course.

The Cabinet Makers' Course is conducted in a room fitted up as a workshop, having benches, cabinet makers' tools, and all accessories. The class practises cabinet making in all its branches, and is given opportunity of seeing practical illustrations of sound, well-made and artistic furniture. Each individual has the advantage of carrying out all operations under the supervision and guidance of a thoroughly competent cabinet maker. Students who purchase their own wood are allowed to retain the examples made by themselves.

The course covers,—lectures and practical work in the use of tools, forming various joints and processes, veneering, marquetry work, qualities of woods and best method of handling, storing and treating them; methods of making out "cutting orders" or writing off lists of wood quantities from drawings; making "laths" or boards, with details for use in "setting out"; name, purpose and relative standard sizes and proportion of each article and variety of furniture, with description of technical terms as applied to different parts; names and meaning of historical styles or periods of furniture, and method of fixing date of any given example; cabinet metal work of various kinds

different uses and methods of fixing; the suitable introduction of glass into furniture, and correct methods of fixing plate, mirrors, lead-lights, etc., tiles, marble, etc.; full course in drawing and designing.

Notes of Interest.

In the Life Model room there is an inverted arc system of lighting combined with an adjustable light operated on a circular hanging rail and directed to the model. This system is used only in two other places in England.

It was found that the Secondary Schools supplied pupils directly to the crafts through the School of Art. The Principal assists students to obtain employment.

It is clearly stated that this is an Applied Art School, applied to modelling, typography, painting and decorating, wallpaper, metal work, woodcarving, life modelling, lithography and textile work. The work of the students on designs for textiles was particularly good.

The students in the Evening Class of Textile Design attend one evening per week, the fee being included in that of the Department of Textile Industries. The subject taken is Artistic Design for Textile Fabrics. The students in all departments appeared attentive and interested.

The Principal said he believed not in teaching geometry as such, but in "doling it out" to the various groups as they were at their own work.

In regard to Wood Carving, it was mentioned that the demand for wood carvers dropped when mission furniture came in, but the Atlantic liners had saved the situation, as they require so much carving.

SESSIONAL PAPER No. 191d

SCOTLAND.

CHAPTER XII: OUTLINE OF THE EDUCATIONAL SYSTEM.

SECTION 1: INTRODUCTORY.

In educational matters every country has a tradition as well as a history and a reputation. In Scotland the educational tradition is admirable, although Scottish leaders themselves are not slow to state that its excellencies have been exaggerated.

As early as the 16th century there was a marked example of class legislation in connection with Scottish education. It provided that the eldest sons of well to-do freeholders should attend school until their knowledge of Latin was reasonably perfect. Younger sons, the daughters of the well-to-do, and all children of the poor were left out of consideration.

The tradition that every locality in Scotland has had a good parish school for centuries does not tally with the facts. Even one hundred years ago only about one-fifth of the children in Scotland attended schools.

Since that time education has always been comparatively easy of attainment. A convenient school for all was at least the ideal, and there have been plenty of educational endowments to meet the case of the capable but poor scholar. These features have been preserved and made more effective, and now there is ample provision of Elementary Schools where education is free, and bursaries or scholarships to assist any 'youth of parts' to go through the Secondary and even the University courses. Taking in Government grants and private endowments, the sum of about £150,000 is paid out annually for scholarships

Education Democratic, Practical and Graded.

Education in Scotland from the Parish Schools to the Universities has always been democratic in its administration. The people control educational matters locally by the exercise of the franchise and nationally by means of their Parliamentary representatives.

The tradition agrees with the facts in that education in Scotland has always been practical. Importance has been attached to vocational education. As an example, navigation was taught in the schools of the chief seaport towns for more than a hundred years. The existing system has preserved and enlarged this feature. Instruction preparing for crafts and trades may now be obtained in Supplementary Courses and Continuation Classes, and afterwards at Central

Institutions which include Technical Colleges, Agricultural Colleges, Colleges of Domestic Science, Art Colleges and the Universities.

Education in Scotland has always been graded. From very early times there have existed the Elementary School, the Grammar or Secondary School for higher education, and the University. The so-called educational ladder has been preserved, but its top is no longer in the classical University for the learned professions only; it now reaches from the Primary School to industrial, technical and professional training for nearly all occupations.

At the present day the Scottish system aims at preparing the child both for individual effort and social duties. Its exponents claim that it provides for both of these and does not admit predominance or exclusive right to either. It regards them as complementary in a life that is neither egoism extended nor pure altruism.

Enlargement of Areas.

There is some agitation at present in the direction of extending the area of each School Board. Those who favor this claim that the nation should aim at being educated as a whole, and not at being an aggregation of more or less educated parishes. Poor parishes have difficulty in meeting the cost of elementary education, to say nothing of being able to provide education of a secondary character. On this ground there is urged a strong claim for the relief of the ratepayer from the school rate. Another argument, in favor of this enlargement of the administrative areas, is that thereby it is probable that the best men would be more surely induced to come forward and act on the School Boards. There is the usual reluctance of the more capable men to come into official life unless the part they are called upon and have opportunity to play is itself important and relatively large.

The Route of Evolution.

Prior to the Reformation the large number of schools attached to the Monasteries and Houses of the various Religious Orders was supplemented by a general system of parochial schools. With the Reformation a renewed impetus was given. John Knox in his 'First Book of Discipline' formulated a system of education by which a liberal scheme of instruction was to be provided in every parish at public expense. This scheme formed the basis of various Acts, the most notable of which was the 'Act for Settling of Schools,' passed by the Scots Parliament in 1696. This Act made general the establishment of a school and the appointment of a schoolmaster in every parish. The landowners of the parish were required to provide the school and to contribute to the salary of the teacher, and in the towns and cities the magistrates had the management and patronage of the schools. Side by side with the accommodation thus supplied there continued the schools of the churches and other voluntary agencies. This composite system persisted till 1833, in which year education grants voted by Parliament first became available for public education. It

may therefore be said that the system originated as a local organization, and that not till a comparatively recent date did it receive the central support and control, which in new countries mark the beginning of an educational system.

Creation of School Boards.

In 1872 the importance of local activity and local support was again formally recognized. In that year the great Education Act for Scotland was passed, by which local education authorities were created and power to levy a rate for the support of the schools was given. In every parish and burgh a School Board was formed, and to these Boards were transferred most of the existing schools. The revenue out of which the schools were supported came from (1) grants from Parliament, (2) fees and endowments, (3) local rates. Complete management was vested in the School Boards subject to the control of the central Education Department. A certain number of Church Schools, mainly those of the Roman Catholic and Episcopal Churches, remained outside this public system, but continued to receive grants from the Central Authority (now the Scotch Education Department).

Since 1872 various Acts of Parliament have extended the scope of the Education Authority, and enlaged the conception of general education. The most important is the Act of 1908, under which provision is made for medical inspection, feeding and clothing of necessitous children, establishment of employment bureaux, and expansion of the system of Secondary and Continuation Class education.

SECTION 2: SCOPE OF THE SYSTEM.

The system here outlined is in essence that which exists today. There are 970 School Boards which manage 2979 public schools and employ 16,678 teachers of various grades; also 352 so-called 'Voluntary' Schools (9 Church of Scotland, 1 United Free Church, 57 Episcopal Church, 220 Roman Catholic Church, 65 Undenominational), with 2,383 teachers. In all about 825,000 children are dealt with. The teachers in the public schools are appointed on professional qualifications only, and without any denominational test; in the voluntary schools they generally conform to the denomination concerned.

There is annually expended on this composite system about £2,560,000; of this, £17,000 is derived from endowments, £836,000 from rates, £49,000 from voluntary contributions, £44,000 from fees and books sold to children, £1,594,000 from Treasury grants, and £20,000 from other sources. Up to the age of 14, at which compulsory attendance ceases, education in the Board School is free.

Along with this must be taken into account the work of the Universities, dating from 1411.

Obligations and Powers under Act of 1908.

The most recent legislation—Education (Scotland) Act, 1908—conserves the main functions of the fundamental authorities for education in Scotland viz., the system of 'Parish Schools' and School Boards, so dear to the heart of Scottish parents, who have long been conspicuous for their jealous care of the educational interests of their children; consolidates the important developments of recent years; and provides a basis for further progress in response to new or newly-appreciated needs of the times. The Act assimilates the School Board franchise to that of the Parish Council and gives additional facilities for the combination of existing School Board districts into larger areas. Boards are now enabled to unite the whole or a portion of their territory with adjacent districts of another Board.

The Boards are empowered (1) to deal directly, instead of through Courts as formerly, with parents who prove neglectful in the matter of school attendance of their children, it being the duty of every parent to provide efficient education for his children who are between 5 and 14 years of age; (2) to institute prosecution of parents for lack of cleanliness, food or clothing of children, and where necessary to supply such lack out of school funds; (3) to ensure sufficient care of destitute and neglected or defective children by provision of food, clothing and lodging; (4) to regularize times of entering and leaving school by adopting 'fixed dates;' (5) to guide and advise young people as to their future careers in life, thus avoiding the easy temptation to casual labor; (6) to co-operate with employers in securing for future workers the best possible industrial training; (7) to require attendance up to 16 years of age at day school or continuation class, or partly at each, as a condition of granting school exemption certificates at the age of 12; (8) to prosecute parents and those who employ such young persons during hours required for such continued education under orders or by-laws of School Boards *re* continuation schools, the penalty on such employers, and on parents who conduce to such offences, being up to $5 for the first and $25 for subsequent offence; (9) to provide out of school funds for meals at cost, lodging of pupils near school, conveying them to school, or paying the travelling expenses of teachers or pupils to or from their homes in out-lying parts. The School Boards deal also with the following matters: care of defectives in special schools; compulsory attendance extending to 16; supplying school books and stationery to pupils; employing medical officers and nurses and providing appliances for medical examination and supervision of pupils; maintaining or combining with other bodies to maintain any agency for collecting and distributing information as to employments open to children on leaving school.

Effect of Act of 1908.

The scope of the new Act is well summarized in a circular from the Department showing its general effect in extending the influences and enhancing the interest attaching to the work of School Boards:

Heretofore that influence and interest have been largely restricted to dealing with children under 14. They will be so no longer. In many respects the three or four years that immediately follow the period of compulsory attendance are the most critical in a pupil's life, and for the

proper use of these a more clearly defined responsibility will henceforth rest upon School Boards. In future the individual citizens who undertake this responsibility will find ampler scope for the exercise of their administrative talents. The development of secondary and technical education under a more elastic system than has up till now been possible, the more perfect organization of continuation classes, the selection of young people who deserve to be guided and, where necessary, assisted by bursaries in their progress towards the universities or the central institutions for the teaching of science, of art, and of agriculture,—these are some of the duties that will lie to the hands of School Board members. Their successful discharge will call into play the highest qualities of skill and discretion.

Burgh and County Committees.

These Committees on Secondary Education, established for certain areas under this Act, are composite bodies, consisting in the main of representatives of the various School Boards of the area, with additional members representative of the managers of the Intermediate and Secondary Schools of the district (whether School Board or voluntary schools) and of County and Burgh Councils. Even in the sphere of Primary Education these Committees are capable of discharging highly useful duties, for it is evident that certain educational services cannot always be properly or economically organized on the basis of individual School Board areas, such as provision for medical inspection of school children, supply of expert teachers of special subjects that lie outside the competence of the ordinary staff of a small school, etc. These Committees do not for the most part exercise any functions of direct management, and may best be regarded as organs of co-operative action on the part of School Boards.

Provincial Committees.

Still other educational services transcend the province even of Burgh or County Committees, such as the training of teachers for the service of the schools, not of any particular district, but of Scotland as a whole. This service till recent times was discharged almost exclusively by Church organizations. But in 1905 the Presbyterian Churches consented to transfer their functions and interests in the matter to Provincial Committees instituted in connection with each of the four Scottish Universities, and containing representatives of School Boards within a given "Province," as well as of the University of the "Province," and of other bodies interested in the training of teachers. After the constitution of the Burgh and County Committees, already referred to, the Provincial Committees were reconstituted on the basis of these Committees.

The Governors of the "Central Institutions" exercise functions analogous to those of the Provincial Committees, and like them contain for the most part representatives of the various Burgh and County Committees of their "Province."

Nomenclature.

The educational system administered by these various bodies, so far as general education is concerned, uses a classification of schools based solely on distinction of curriculum. The term 'Elementary,' as defined in the English Education Act of 1870, is not strictly applicable to any class of school in Scotland.

The term 'Higher Grade' connotes a school receiving grants under the Code, and is therefore restricted in application. The term 'Higher Class' comes originally from the Education Act of 1872, and is mainly of historical interest, having no necessary relation to the character of the work done in the schools so designated.

The nomenclature used is the following:—

Primary School.—A school, or a department of a school, giving an education based upon English to pupils who are, as a rule, below the age of 14. A Primary School may contain individual pupils, or small sections of scholars, who are being instructed on the lines of an Intermediate School.

Intermediate School.—A school providing at least a three years' course of instruction in Languages, Mathematics, Science, and such other subjects as may from time to time be deemed suitable for pupils who, on entering, have reached the stage of attainment in elementary subjects indicated in Article 29 I. of the Code.

Secondary School.—A school providing at least a five years' course of instruction beyond the Qualifying stage (Article 29 I. of the Code).

Functions of Various Schools.

An Intermediate School corresponds generally to a Higher Grade School, but there are some Higher Class Schools which may fall into this category.

A Secondary School corresponds generally to a Higher Class School, but there are some Higher Grade schools which have developed, or in suitable circumstances may be expected to develop, a complete Secondary School course.

An Intermediate School should retain its pupils until at least the age of 15-16, and the normal attainments of the pupils at that age should be those indicated by the Intermediate Certificate.

A Secondary School should retain its pupils till at least the age of 17-18, and no pupil who has not qualified for the award of some form of Leaving Certificate, or for one of the alternative technical or commercial certificates, can be held to have completed the course satisfactorily.

Though the education of the Intermediate School is of the nature of Secondary (as distinguished from Primary) Education, the choice of subjects and the relative importance to be given to them at various stages of the curriculum may properly vary within certain limits, according as the school is one providing a three years' or five years' course. The curriculum of each type of school should be so arranged as to present, at the age at which pupils normally leave, a certain unity and completeness.

On the other hand, it is important that as between the Secondary School and the various Intermediate Schools of the same district there should be no unnecessary divergence of curriculum in the earlier stages, so that transference from the one to the other may not be impeded.

Specialized Education of Adolescents.

This system of general education is supplemented by provision for the specialized education of adolescents and adults under the regulations of the Continuation Class Code, culminating in the work of the specially selected Central Institutions (Technical Colleges, Agricultural Colleges, Schools of Art,

etc.) whose function is to focus the work of the Continuation Classes and to provide the highest possible instruction in the arts and sciences underlying the practice of skilled occupations.

The successful working of this system postulates arrangements for securing a supply of well-educated and thoroughly trained teachers, adequate to the needs of the schools—in itself a task of no inconsiderable magnitude.

SECTION 3: PRIMARY EDUCATION.

The most important function of School Boards is still that of providing (along with the managers of voluntary schools) for the primary education of children between 5 and 14 years of age. To this end the labours of hosts of teachers are directed, and for this purpose by far the larger portion of the growing expenditure upon education is incurred. The prevailing conceptions as to the scope and purpose of Primary Education have undergone considerable modifications in recent years, very largely as a result of the gradual raising of the school age. At no time has Primary Education been regarded in Scotland as simply a matter of instruction in Reading, Writing, and Arithmetic, and at the present time less than ever is it so regarded. The problem is how to use the various subjects of instruction so as to develop all the faculties of the child, to elicit his sympathies, regenerate his impulses, cultivate his faculty of observation, exercise his intelligence, and improve his powers of expression. This is a high and difficult art, demanding for its exercise thoughtful, devoted and well-trained teachers. Provided the art be skilfully exercised, proficiency in Reading, Writing, and Arithmetic will be secured as a matter of course, as an incidental result, within the usual limits of school life in the case of normal children. But to aim at this incidental result principally or directly may well be to stultify the whole educational process without securing more than an evanescent, because mechanical, proficiency in the subjects on which instruction has been concentrated.

Still, for practical purposes, Reading, Writing, and Arithmetic may be taken to be the main subjects of instruction in the Primary School curriculum. All the others are to be regarded as auxiliary—valuable for the discipline they afford and the variety of means they offer for exercising the intelligence of the children, rather than for the amount of positive knowledge or of proficiency acquired, even though that may be considerable.

The auxiliary subjects are:—Nature Knowledge, Geography, History, Physical Exercises, Singing, Drawing, and (for girls) Sewing. The three first-named may and ought to be made to subserve in large degree the purposes of the main instruction in English and Arithmetic, and instruction in the former class of subjects need in no way interfere with the attainment of due proficiency in the latter. Drawing, if properly taught, is a valuable instrument for Nature Study, and may indeed be reckoned as part of the same subject. Other subjects, *e.g.*, Physical Exercises and Singing, while less intimately allied with the main instruction, are essential concomitants of it, while Sewing is an art in which some degree of expertness must be acquired during school life if it is to be acquired at all.

Supplementary Courses.

A notable educational development of recent years has been the attempt to add reality to the work of the Primary School in its later stages by setting aside some time for the consideration of what has been already learned in its practical bearing on the probable future occupation of the pupil and the employment of his leisure time. That is the special function of the 'Supplementary Courses' to which it is desirable that one or, if possible, two years should be given before the close of the period of general education.

The Supplementary Course is a Scotch institution with a close resemblance to the *cours complementaires* in France. It prepares directly for industral training. It is the most advanced work of the Primary School, and is designed for pupils who leave school at 14. Under the Act of 1908 the School Board may fix dates for children entering and leaving school, these being chosen with the approval of the Central Authority, viz., the 1st of August, February or April next after the child's 5th birthday for entering; and corresponding ones at the age of 14 for leaving.

From the time of entering to about 7 years of age, the child remains in the Infant Department; then from 7 to 12 there are five main stages. At 12 he passes the qualifying examination and goes to either Supplementary Course or Secondary work.

There is no distinction between Elementary and Secondary work before 12 years of age. The 6th and 7th year course is the same in all types of school, the idea being that if you are going to build higher, you will have a better foundation all along. The bulk of opinion is in favor of deferring specialized instruction till after 12.

Selection of Course.

At the age of 12 a notice is sent to parents asking them what course they desire the child to follow. If a child is to leave at 14 it is better for him to take the Supplementary Course, then his artisan or commercial training in the evening schools, at which the Board has power to keep him till 17. The integral difference between these two plans is that in the Supplementary Courses no new ground is broken; what training is given is through English literature, and the pupils' work is consolidated; *e.g.*, arithmetic is technical—'graphs' and the like. Generally speaking half the time is given to manual work; the boys have 5 hours drawing and manual instruction and the girls have full housekeeping, including household arithmetic and account-keeping. They go out in turn to buy provisions to be cooked as the day's work, and they also have dressmaking and other things.

If a boy had taken the Supplementary Course and then changed his mind, he would really require to go back to the beginning of the Higher Grade course, and though he might then go a little faster he would be handicapped almost to the extent of the time he had spent. He would not lose much, however, in his powers of observation and reasoning. On the science side the work in the Continuation

Classes follows that of the Supplementary Course. After two years of the latter and two years of evening technical work a lad would be as well equipped for the particular kind of artisan work to which he was going as if he had had the three years' science course of the Intermediate School.

To Serve the Largest Number.

The Supplementary Course meets the needs of the many. As a matter of fact there are only very few cases of boys changing from one course to the other, chiefly because the schools are very fortunate in having the right men to advise the parents, so that only those who are quite sure of not being able to keep the boy at school after 14 send them into the Supplementary Classes. Out of about 7,000 going out yearly in Glasgow probably 2,000 have not reached the Supplementary stage, but the by-law passed under the Education Act requires that they shall make it up before 16. The difficulty is that where boys are working in factories and shops, the number of hours, including education, must not exceed the limit stated in the Factory Act. Hence some employers are rather inclined to say that if there is any restriction as to hours of labour they will take nobody before 17. Others pay their apprentices sixpence a week additional for each certificate they get, so that some of these boys earn fourteen shillings who would ordinarily be getting only ten. One of the main objects of the by-law is to improve the attendance at day school, and in time it is expected that those who do not attend will be so much handicapped in getting employment that the effort will be made to keep them at school till 14. Only those who do not attain a certain standard come under the by-law, and the parents begin to appreciate it already.

Pupils who have satisfactorily completed the course of the Primary School, including attendance for at least one year at an approved Supplementary Course, are granted the 'Certificate of Merit'.

While there is no doubt that in many of the Supplementary Courses good work is being done, there is still need of improvement, specially in the direction of the future work of the pupil in Continuation Classes. At present too many come forward to Evening Classes with little of the special training that the Supplementary Courses are designed to secure.

In the Supplementary Classes pupils receive special instruction in that which prceedes the trade they have to learn. If the boy is to follow any given line of work he gets practical training in the use of good tools. If he is going into ironworking he does not learn in the Supplementary Classes to become a mechanic, but he gets training in the use of ironworking tools, and is given experience in order that he may know the meaning of materials, tools, plans and drawings.

During the year 1910, 60,683 candidates were approved by the Inspectors for enrolment in Supplementary Courses or Higher Grade Departments.

Some idea of the progress in advanced work in the Primary Schools during recent years may be gathered from the fact that whereas in 1900 the number of these schools was only 162, with an average attendance of 3,282, in the next ten years the number of schools increased to 1,945 with average attendance 43,287.

DEPARTMENT'S SUGGESTIONS FOR SUPPLEMENTARY COURSES.

The supplementary instruction is to a certain extent specialized, and the Scotch Education Department indicates the nature of the specialization in some Specimen Supplementary Courses. It is expressely stated that these courses are mainly suggestive and cannot as a rule be satisfactorily overtaken in their whole extent by pupils who leave at 14; it is expected, however, that they will be carried out in such a way that the pupil can continue them without any essential change of method in the more advanced Continuation Classes.

The following are the differentiated lines of work suggested:—

Preparation for commercial pursuits. (Commercial Course.)

Preparation for manual occupations and trades. (Industrial Course.)

Preparation for rural life. (Course for Rural Schools.)

For girls—Preparation for domestic duties. (Household Management Course.)

Navigation is also suggested for Seaboard Schools.

Their Main Objects.

But school work, says the Department, has for its end and aim objects more important than preparation in the narrow sense for any particular occupation. It should aim at producing the useful citizen, imbued with a sense of responsibility and of obligation towards the society in which he lives. It should render him—so far as the school can do so—fit in body and alert in mind, and should prepare him for the rational enjoyment of his leisure time, as well as fit him for earning his living. These are ideals, no doubt; but they are ideals towards which the school should constantly strive. It follows that instruction in certain matters of general import should in all cases be combined with, and should even take precedence of, the instruction special to each of the courses of the preceding paragraph.

With regard to the special instruction to be given in the several Supplementary Courses, it is not intended that such instruction should attempt to take the place of that kind of knowledge which can only come from the daily practice of some particular occupation. But this instruction, rightly given, should make that practice more intelligent, and should remove certain difficulties from the way of the learner. It should be sufficiently general in scope to make it profitable even for those who for one reason or another will not follow in after life the particular group of occupations which has been kept mainly in view.

Developing Self Reliance.

The Department recognises that great differences will exist, particularly between town and country schools, as regards facilities for the formation of such courses. In considering the problem, the position of the small rural school taught by one teacher has been kept in mind. In such circumstances class teaching of

the small number of pupils who have reached the Merit Certificate stage is clearly out of the question. The Department does not regard this as being, in certain respects, any real disadvantage. It has been frequently noted as one of the defects of the large town school, with its minute sub-division of classes, that the pupil is left little leisure to think for himself, and that the habit of depending upon the instructions and explanations of the ever-present teacher is apt to become ingrained. Whereas, in the opinion of not a few experienced observers, the country lad, as compared with his contemporary in a town school, shows towards the close of his school career greater intellectual resources. This is due not so much to inherent mental ability or to any superiority in the teaching, as to the fact that the aid of the teacher not being always available, he has been forced by circumstances to think for himself. It is clearly desirable, in the case of a pupil who is to be more or less his own master at 14, that there should be in school a period of preparation for this state of semi-independence, during which transition period he shall be regarded not as a pupil of a class, but as a student studying, under direction, certain subjects for ends which he himself in some degree realises and desires.

Not merely should self-reliance in study be fostered, but a sense of responsibility should be inculcated, by giving the pupil at this stage some authority as regards conduct in the playground, and the minor matters of discipline, as well as a position of honor in exercises common to the school, such as drill. The boy at this stage tends to acquire a sort of authority among his schoolmates, and it is most important that this natural influence should be enlisted on the side of law and order, rather than that it should be driven, as it easily may be, into opposition. There seems to be no reason why it should not be turned to account in Primary Schools, as it frequently is in Secondary Schools, as an instrument in the development of character, and in the fostering of a healthy school spirit.

Individual Study Directed to Practical Ends.

Whether in town or in country, whatever the opportunities for collective instruction may be, the Department desires that the distinguishing note of the work of the pupils in the Supplementary Courses should be individual study directed to practical ends. The object should be, not so much to impart information to the pupil, as to exercise him in obtaining for himself from sources within his reach, and setting out, in an orderly manner, all necessary facts relative to a given topic.

Great use may be made of the daily newspaper as a starting-point of such investigations. For instance, having made an analysis of the shipping returns for a given port the pupil may ascertain the general character of its trade; look up in an atlas the various places mentioned in the shipping list; make note of their relative position and distance; gather from school geography, gazetteer, or encyclopædia certain information as to the more important of them; and finally set forth in well digested and orderly form the information obtained. He may proceed to make a similar investigation for another port, and institute

a comparison; or he may be referred to the sources of accurate information as to the total exports and imports of a place and be asked to make an analysis of these over a series of years. Similarly, historical allusions in the leading article or elsewhere in the newspaper may be made the occasion for reference to such sources of information as are to be found in the school library, and for a certain amount of collateral reading of authorities, the results of which should be embodied in *precis* form. All this is not matter for formal and regularly recurring lessons in geography or history, but for individual investigation extending over, it may be, several days. The newspaper will also be useful in other ways. Its various articles will afford material for exercise in *precis* writing; difficulties of vocabulary will give occasion for frequent and useful reference to the dictionary; above all, perhaps, the market reports will furnish a body of material for exercises in calculation much superior to the cut and dried examples designed to illustrate the rules of a text-book, while their perusal may be made the occasion of acquiring much incidental information of practical value.

By means such as these a sense of actuality may be given to the work and a spirit of initiative cultivated in the pupils. The examples given are not intended as directions to be implicitly followed; it is much more important that individual teachers should exercise their ingenuity in devising for themselves the best means they can for achieving the essential objects aimed at.

SECTION 4: INTERMEDIATE AND SECONDARY EDUCATION.

The immense impulse which the passing of the Act of 1872 gave to Primary Education made its effects felt within a very few years upon Intermediate and Secondary Education also. In course of time the original provision for higher education was supplemented by the development in connection with favourably situated Primary Schools, of secondary departments which have become the Higher Grade Schools of to-day. While a large proportion of these are satisfied with providing a broad basis of general education on Secondary School lines for pupils who are to leave school about the age of 16, a small number are staffed and equipped upon a scale which enables them to give a complete Secondary Education parallel to that offered by the older endowed schools and Higher Class Public Schools. As a consequence it is now possible to consider the supply of centres of higher education as reasonably complete.

SECTION 5: CONTINUATION CLASSES.

Duties and Powers of School Boards.

Remarkable activity has been shown in the endeavor to discharge the new duties placed upon School Boards by section 10 (1) of the Act of 1908 as regards the establishment of classes for further instruction of young persons who have left school, with a view to their future usefulness as workmen and citizens. The

number of centres for Continuation Class instruction is now over 1100. Sec. 10 is as follows:—

10.— (1) Without prejudice to any other power of a school board to provide instruction in continuation classes, it shall be the duty of a school board to make suitable provision of continuation classes for the further instruction of young persons above the age of 14 years with reference to the crafts and industries practised in the district (including agriculture if so practised and the domestic arts), or to such other crafts and industries as the school board, with the consent of the Department, may select, and also for their instruction in the English language and literature and in Gaelic-speaking districts, if the school board so resolve, in the Gaelic language and literature. It shall also be their duty to make provision for their instruction in the laws of health and to afford opportunity for suitable physical training.

(2) If it is represented to the Department on the petition of not less than ten ratepayers of the district that a school board are persistently failing in their duty under the foregoing subsection, the Department shall cause inquiry to be made and may call upon the board to institute such continuation classes as appear to the Department to be expedient, and, failing compliance, may withhold or reduce any of the grants in use to be made to the board.

(3) It shall be lawful for a school board from time to time to make, vary, and revoke by-laws for requiring the attendance at continuation classes, until such age not exceeding seventeen years as may be specified in the by-laws, of young persons above the age of 14 years within their district who are not otherwise receiving a suitable education, or are not specially exempted by the school board from the operation of the by-laws; and that at such times and for such periods as may in such by-laws be specified. Such by-laws may also require all persons within the district having in regular employment any young person to whom such by-laws apply to notify the same to the board at times specified in the by-laws, with particulars as to the hours during which the young person is employed by them:

Provided that no young person shall be required to attend a continuation class held beyond two miles measured along the nearest road from the residence of such young person.

(4) Sections 185, 186 and 187 of the Public Health (Scotland) Act, 1897, shall apply to by-laws made under this section as if they were herein re-enacted, with the substitution of the Department for the Board and of the school board for the local authority.

(5) If any person fails to notify the school board in terms of any such by-law in regard to young persons employed by him, or knowingly employs a young person at any time when his attendance is by any such by-law required at a continuation class, or for a number of hours which, when added to the time required under any such by-law to be spent at a continuation class, causes the hours of employment and the time so spent, taken together, to exceed in any day or week, as the case may be, the period of employment permitted for such young person by any Act of Parliament, he shall be liable on summary conviction to a penalty not exceeding 20 shillings, or in case of a second or subsequent offence, whether relating to the same or to another young person, not exceeding 5 pounds.

(6) If any parent of a young person by wilful default, or by habitually neglecting to exercise due care, has conduced to the commission of an offence under the immediate preceding subsection, or otherwise to failure on the part of the young person to attend a continuation class as required in any such by-law, he shall be liable on summary conviction to the like penalties as aforesaid.

Advanced Work by County Committees.

A small number of County Committees have taken active steps towards the organization of technical instruction within their area, including the preliminary step of appointing a special organizer. In this connection the systematic scheme of the Renfrew County Committee is cited as worthy of imitation. The scheme aims at a concentration of advanced work at certain central points, these centres being in turn affiliated with the Central Institutions. It comprises one feature of unusual interest, the first of its kind, a graded Rural Course extending over three years, and leading on to a study of Agriculture and Agricultural Science. All the way through the instruction is given a 'rural' bias, so that the country student feels himself specially provided for as much as the town artizan is in an industrial course.

For further particulars of the work of County Committees, including plan of co-operation between the Fife Committee and the School Boards, see Chapter XVI on organization in County of Fife.

Progress in Continuation Class Work.

The stimulus given to the institution of Continuation Classes by the Act of 1908 was demonstrated during the year 1910. Probably the change of procedure by which Continuation Class authorities were requested to submit to the Department a definite programme of work, some distance in advance of the opening of the session instead of after the session had started, had something to do with this. The change has been found profitable in several ways. (1) It helps to make the Continuation Class question a live one the whole year round, managers requiring early in the summer to prepare their plans for the autumn. (2) It calls upon managers themselves to determine their coming programme —after a careful survey of the needs of their area—rather than to leave the programme to be decided by the demands of intending pupils on enrolment night. (3) It gives time for the discussion of subjects of general application, *e.g.*, organization, affiliation, etc., before the detailed proposals come up for examination.

The completed statistics for 1909-10 reveal the fact that 127,687 individual students were included for grant, as against 108,813 in the session 1908–9. Comparing these figures with 78,171 in 1901–2 (the first year of the operation of the Continuation Class Code) it is evident that a substantial increase in the provision for after-school instruction has been attained, and there is reason to hope that the steady progress shown will be well sustained.

In 1910–11, 593 local authorities successfully conducted Continuation Classes, as compared with 550 in 1909-10. The premature closing and abandonment of some 150 centres (mostly in rural districts), conducted by 65 School Boards, resulted in only 1,121 centres coming to fruition, as compared with 1,055 in 1909–10. Continuation Classes all over the country are urgently in need of assistance by way of loan of specialist teachers. Often Boards are unable to include in the curriculum provided for young people the more attractive subjects of instruction, *e.g.*, Cookery, Woodwork, Physical Exercises, etc., because no teacher is available. When a regular rota of such teachers is forthcoming, it may be possible to hold together more securely many rural classes which now lead a precarious existence.

Teachers for Continuation Classes.

In the expectation of a much more widespread provision of Continuation Classes than exists at present, and in view of the prime importance of having these classes in all cases taught by fully qualified specialist teachers, rather than by members of the day school staff who may possess only a limited qualification in the subject, County committees are urged to take up on their own initiative the question of the appointment of a staff of such specialist teachers for Continuation Class work, particularly in agricultural districts, whose services would be lent out to various Boards on condition of a contribution proportionate to the service rendered in each case.

Compulsory Attendance at Continuation Classes.

There is evidence that this subject is engaging the attention of a rapidly increasing number of School Boards throughout the country. It is very satisfactory to note that no objections were lodged with the Department to compulsory by-laws passed by Boards, and that they appear to have worked smoothly. In some cases the application of the by-laws is restricted to persons under 16 who have failed to pass the qualifying examination—a very modest requirement indeed but one which yet makes a useful beginning. In other cases it is found that the clause requiring attendance at Continuation Classes, up to the age of 17 years, extends to young persons who have failed to reach the standard of education implied by two years' attendance at a Supplementary or Intermediate Course. In all cases a clause is inserted to permit of the School Board granting exemption from the operations of the by-laws in any particular case—an indispensable condition and one which should provide sufficient security against any cases of individual hardship which may arise.

SECTION 6: DEPARTMENTAL SUGGESTIONS TO SCHOOL BOARDS.

The Scotch Education Department issued a circular (426) on 27th August, 1909, in connection with the foregoing important matters, directing the special attention of all School Boards to the new and exceedingly important duties placed upon them by section 10 of the Act of 1908, and requesting their careful consideration in connection with all proposals for the forthcoming session of Continuation Class work.

The Department sets out by stating that a certain amount of moral training had been given and a certain modicum of instruction in Reading, Writing and Arithmetic (and incidentally in other subjects) imparted in the hope, apparently, that the education so given would be of material assistance to the child in its future occupation, whatever that might be, and that he or his parents might be trusted to turn it to good account. Up to the passage of the Act of 1908, however, it had been no part of the statutory duty of a School Board or other public body to take cognizance of the period of adolescence and re-enforce parental control when most needed, but actually weakened from natural causes; to guide, inform and advise young persons as to choice of occupation; to ascertain what further systematic instruction was needed to increase their efficiency in occupations and make them more useful citizens; or to see to the actual provision of suitable means of further education. Though sporadic, and in large measure unsystematic, efforts have been made by many School Boards to provide such instruction, generally speaking they had felt no responsibility for providing education for young persons over 14.

Extent of Continuation Class Work.

Experience in other countries as well as Scotland shows that instruction and control and discipline of adolescents is a matter of State concern, and it

is a tribute to the soundness and efficiency of Scottish educational traditions that the momentous experiment in this direction is to be made first of all in Scotland. The legislation has indicated generally certain lines which this further education should follow:—(1) The maintenance and improvement of the health and physique of young people; (2) the broadening and refining of their interests and sympathies by the influence of good literature; (3) equipping them with a competent knowledge of some craft, industry or occupation which offers a reasonable chance of providing a means of livelihood in their adult years; (4) the inculcation of the responsibilities and duties, as well as rights and privileges, of communal life.

Improvement to Come Gradually.

The task now imposed upon the educational authorities of the country will require the whole-hearted efforts of a generation not less active in educational endeavor than that which has brought the working of the present Education Acts to something like fruition.

The first step is to ensure that all School Boards shall provide, in rudimentary form, at least, some part of that instruction called for by the Continuation Class Code. That part which bears upon industrial training will require the services of teachers specially qualified; but as a beginning, School Boards should provide for young persons who have left school the form of instruction prescribed for Supplementary Courses of the day school. Such instruction must be rearranged and to some extent broken up to meet the conditions of Continuation Class work, but every School Board in the country may reasonably be expected to provide this instruction with their existing staff, though many have hitherto not attempted to do so, although the Government grant under the Continuation Class Code enables managers to recover three-fourths of their outlay upon maintenance.

Supplementary Courses Prepare for Continuation Classes.

The foundations of all Continuation Class instruction should be laid in the Supplementary Courses of the day school, and some course of the kind outlined in the Code should be placed within reach of every day school pupil between 12 and 14, either in his own or a neighbouring school. Much greater attention than at present should be given to the development of the practical work prescribed, much greater pains taken to adapt the instruction to the probable future occupations of the pupils, and vigorous efforts made to ensure that a much smaller proportion of pupils leave the day school without something approaching to two years' experience in Supplementary Course work. This of itself will probably imply in very many cases some overhauling of Elementary Class curricula and systematic enforcement of regular school attendance at an earlier age than is at present customary.

Importance of Supplementary Courses.

The Qualifying Examination is, of course, the passport, not merely to Intermediate and Secondary Schools, but also to Supplementary Courses. The importance of the latter has not yet been fully realized by all managers, and still less by all parents. Consequently, of the 60,683 scholars who successfully passed the Qualifying stage (together with 2,141 who were accepted as showing equivalent attainments) during 1910, a considerable number drifted into the first year of the Intermediate Course without having any genuine intention of remaining to the end. Steps are being taken, both by local managers and by the Department, to try and cope with this undoubted waste by diverting the stream into its proper channel—an end which will never be satisfactorily attained until Supplementary Courses are placed in a position of equal dignity with the earlier years of the Intermediate Curriculum. In the circumstances, it would not be fair to draw any deductions from a comparison between the large number who enrol as Intermediate scholars and the comparatively small proportion who complete the course creditably. Looked at y itself, indeed, the number of those who gain the Intermediate Certificate is far from being unsatisfactory. Last year the total was 4,093. In 1910 as many as 1,088 Leaving Certificates were gained—a figure considerably in advance of anything that had previously been reached.

Object of Supplementary Courses.

The duty of a School Board under the Act of 1908 is not merely to provide necessary opportunities for making good the defects of previous education,but to take steps to ensure that all young people of their district shall have received that general preparation for the duties of life which it is the object of the Supplementary Course to supply. This object will be attained most completely and economically, especially in the rural districts, by encouraging, if not requiring, a certain limited attendance during the winter months at ordinary Supplementary Classes of pupils over 14 who have not already completed 2 years' attendance at such courses.

The essential idea of Supplementary Course work is that of individual study under direction rather than that of class instruction. These older pupils should have individual lines of study marked out for them, to be followed up very largely at home, the teacher being called on for explanation of difficulties and review of work done, as was the custom in olden days in the rural schools of Scotland. These centres of instruction will be visited at regular intervals by specialist teachers competent to advise and direct students in subjects requiring expert knowledge or skill beyond the resources of the ordinary school staff.

DEVELOPING PUBLIC OPINION.

In more populous districts, particularly in industrial centres, the equivalent of Supplementary Course instruction will probably be provided more conveniently in classes distinct from those of the day school. The disadvantages attaching

to Evening Class instruction are so grave in some cases as to make it doubtful whether they do not outweigh the advantages. It is hoped that School Boards in such districts will make a strong effort, by conferences with employers and otherwise, to cause public opinion to regard attendance at suitable Continuation Classes as part of that instruction in trade or industry which an employer is supposed to provide for employees in trades where there is a regular system of apprenticeship, and therefore as nominally falling within the regular hours of employment.

Co-operation of Employers and Employed.

It is even more important to create among employers in those industries in which there is no semblance of an apprenticeship, and in which the labor of adolescents is too often no preparation for independent livelihood in adult life, a sense of responsibility for the future of young persons in their employment.

It is obvious that bylaws passed by School Boards under the Act of 1908 requiring attendance of young persons under 17 at Continuation Classes, (the times of such attendance to be deducted from the maximum number of hours of daily or weekly employment, as prescribed for any industry by Act of Parliament) must be largely inoperative unless supported by public opinion. School Boards in industrial districts have no more important or pressing task than the fostering of a movement for the better use of the years of adolescence as a preparation for adult life. To accomplish this, School Boards must associate with themselves representatives of employers and employed, and must join hands with every agency for industrial efficiency and social welfare. They must also adapt their classes to the exigencies of particular employments, both as to periods and nature of instruction.

Voluntary or Compulsory Attendance.

The Department proceeds to ask whether it is possible on a basis of voluntary attendance to reach the class of young persons who have little instinct for self-improvement and are least willing to exchange the freedom of the streets for the discipline and comparative restraint of even the most attractive Continuation Classes. They also question whether there may not be an even larger class who will accept a certain measure of compulsion without demur and profit by or even enjoy attendance at Continuation Classes when attendance is required of them, who, if left to themselves, lack sufficient energy or resolution to resist other attractions. Lastly they ask whether it is possible on any system, whether voluntary or compulsory, to rescue youths from "blind-alley" occupations and give them a training which will afford better chance of regular employment in adult life, unless the hours of casual labour are restricted and regulated so as to admit of the necessary teaching being given.

Analysis of Occupations.

For the proper consideration of these questions, the first requisite would seem to be the annual compilation of a register of young persons between 14 and (say) 18 not attending schools, with an analysis of occupations followed by them. Each group of occupations followed must be closely studied to discover the sort of instruction most suitable to those engaged in it, not merely for present efficiency, but for future power. It is important also to consider the times at which and the manner in which instruction may best be given, having regard to the exigencies of the particular employment.

By such a system of Continuation Class instruction, resort to compulsion may be rendered unnecessary, and if not, a School Board which has exhausted all efforts at organization on a voluntary basis will be able to appeal with greater confidence for the power of compulsion which the law now allows. When compulsion is resorted to, it should be limited in the first instance to those who have not received the minimum of supplementary instruction before leaving the day school.

The register referred to would be valuable in ascertaining the extent to which young persons are profiting by present educational opportunities, and also in making out another section—that relating to the maintenance of Employment Bureaux.

It is urged that all Continuation Class instruction should be intensely practical, in the sense that it must be regulated by the purposed future of the pupil, as it is obvious that a wise choice of that future by individuals is of vital interest to the whole community. Further that arrangements should always be made for the instruction of students in English, in the laws of health and duties of citizenship, and opportunity should also be offered for suitable physical exercises.

Teachers Should Know Occupations of Pupils.

Thorough knowledge on the part of School Boards of the occupations actually entered upon by young people when they pass from the Day School is not only an essential pre-requisite of any sound system of Continuation Class organization, but is needed by teachers as a directing influence in ordering the work of Supplementary Courses for children who have not yet left school. Teachers in charge of these courses exercise an important if not determining influence upon the choice of occupations by their pupils, and it is essential that in this work they should have the assistance and support of a properly constituted agency established for the purpose of aiding children leaving school in their choice of future employment, such as the Act of 1908 empowered every Board to establish.

Rural Education.

Schemes for development of work of the Agricultural Colleges in rural districts are progressing satisfactorily, their main objects being to place at the disposal of the farming community the benefits of experience and research of College Staffs,

and to link up with the College organization the agricultural and horticultural work done in various schools and classes in the College districts. These ends are being attained chiefly by the appointment of (*a*) a College organizer for each county or group of counties comprised in the College area; (*b*) additional dairy and poultry instructresses; and (*c*) in the case of the crofting districts comprised in the area of the Aberdeen College, special crofter instructors. These extension schemes have developed in considerable measure up to the date of this Report. The formation of local advisory committees to assist staffs of Colleges in organization of extension work has the hearty approbation of the Department.

SECTION 7: CENTRAL INSTITUTIONS.

The Central Institutions may be said to form the crown of the Continuation Class system. The following is a list of such Institutions at work in 1909-10:—

Aberdeen and North of Scotland College of Agriculture.
Aberdeen, Robert Gordon's Technical College.
Dundee Technical College and School of Art.
Dunfermline College of Hygiene and Physical Training.
Edinburgh and East of Scotland College of Agriculture.
Edinburgh College of Art.
Edinburgh, Heriot-Watt College.
Edinburgh, Royal (Dick) Veterinary College.
Edinburgh School of Cookery and Domestic Economy.
Glasgow and West of Scotland College of Domestic Science.
Glasgow and West of Scotland Technical College.
Glasgow Athenæum Commercial College.
Glasgow School of Art.
Glasgow Veterinary College.
The West of Scotland Agricultural College.
Leith Nautical College.

These Institutions continue to grow steadily in importance and usefulness. The normal goal of students entering the Institutions is the diploma awarded on the completion of a four years' course by a committee of assessors, including a person of eminence in the profession to which the particular diploma course has relation. By means of co-operation between the Central Institutions and School Boards the work performed in courses under Division III. of the Continuation Class Code is linked up with the higher work in the Central Institutions, and steady progress in the perfection of this system of co-operation is being effected year by year.

Influence of Central Institutions.

Fortunately there are many districts in Scotland where the question is not how to meet a minimim requirement such as that of the Supplementary Course, but rather how to organize technical instruction relating to industries

so as to provide in the completest way possible for the industrial requirements of the district. In some sections, recent progress in Continuation Class instruction has been very remarkable, both as regards numbers in attendance and in proportion of students who carry their studies to a really advanced stage. In such districts the Central Institutions have exercised a direct influence upon the whole, and gradually all purely elementary work has been eliminated from these institutions, which have been linked up with subsidiary centres throughout the whole district, the work at the latter being recognized as *pro tanto* equivalent to work done at the Central Institution.

Increasingly vigorous efforts have also been made to interest both employers and employed in the work, inducing the former to give all possible facilities and encouragement to employees to attend the classes. This process of co-ordination and affiliation is most advanced in classes for subjects which naturally connect themselves with the Technical Colleges, but in Industrial Art also the advance has been considerable.

Agricultural Colleges, though of more recent foundation, are rapidly occupying their special field of operation. For each County or group of Counties within the "Province" of the College a highly skilled instructor has been or will be appointed to give advanced instruction at suitable centres, whenever sufficiently qualified teachers can be found to exercise an influence upon School Gardening and Nature Study classes of the primary school, so as to make them an effective introduction to the special study of agriculture; and generally to act as agent of the College in bringing home to the farming community in every possible way the results of agricultural research and experience. It is hoped that a similar course may be followed in the case of the Central Schools of Cookery and Housekeeping, Colleges of Domestic Science, etc.

The total grants to Central Institutions from the Department for 1909-10 were (*a*) from Parliamentary Vote, £39,208 and (*b*) from Education (Scotland) Fund, £34,797. For 1909-10 the total maintenance expenditure of Central Institutions (including 5 recognized as such since passing of Act of 1908) was £123,321. This expenditure was met by (a) receipts from students' fees, (b) the Department's grants referred to above, and (c) contributions from local resources, including Endowments,

It is not considered necessary here to give extended or detailed information concerning the work of the several Central Institutions. General information, to the extent that may be useful in Canada, is given in the report on Edinburgh and Glasgow, in regard to some Central Institutions.

THE UNIVERSITY GRANTS.

A Parliamentary Grant of £42,000 is made annually to the four Scottish Universities. The expenditure out of these grants is not accounted for in detail to the Treasury, nor are unexpended balances surrendered at the close of the financial year. The grant is made under Section 25 of the Universities (Scotland) Act, 1889. In addition, the Universities receive £30,000 annually from the Local Taxation Account under Section 2, Subsection (2) of the Education

and Local Taxation Account (Scotland) Act, 1892. Thus a sum of £72,000 per annum is received by the Universities from Parliament and is administered by the University Courts in accordance with the ordinances of the Commissioners under the Universities Act, 1889.

The Scotch Education Department does not control these moneys in any way, but under Section 16 (1) (*b*) of the Education Act 1908, the Secretary for Scotland (the representative head of the Education Department) administers grants to the Universities from the Education (Scotland) Fund. (See above.)

The following table shows for 1908-9 the number of students and the allocation of the Parliamentary Grant of £72,000.

	Grants.	*Number of Students.*
Edinburgh	£25,920	3,286
Glasgow	20,880	2,699
Aberdeen	14,400	970
St. Andrew's	10,800	585
	£72,000	7,540

SECTION 8: HOW EDUCATION IN SCOTLAND IS FINANCED.

Sources of Income.

The money by which all these various educational institutions are financed may be said to come from four main sources, viz:—

(1) Treasury Grants derived from taxation.

(2) Receipts from local rates.

(3) Endowments and receipts from investments of corporate bodies.

(4) Fees of pupils or students.

The public at large provide (1) and (2), the former to the central government, the latter to the local rating body. No. 3 is derived from particular bodies or individuals who have felt the importance to the country of a proper provision of education. No. 4 is a receipt directly from the beneficiary and bearing an approximate relation to the amount of the benefit received.

The contribution of the public under the first head flows as part of general taxation to the Treasury. The amount required is voted annually by Parliament, or is allocated specifically under various Acts of Parliament. The details of distribution to the various managing bodies are, with the exception of the University grants and the grants to reformatory (industrial) schools, administered by the Scotch Education Department. Under the second head the School Boards levy (through the Parish Councils) local rates of various amounts according to the needs of the area controlled by the Board. The amount so raised is what is required in supplement of grants from the central body and other revenues, to meet the current expenditure of the year in question.

(1.) CENTRAL FUNDS.

The Parliamentary and Science and Art Grants.

There is voted annually by Parliament for Public Education in Scotland, including the Science and Art Grants, a sum which is administered by the Scotch Education Department. In 1909-10 the amount granted was £2,147,291.

This total may be subdivided as follows:—

1.	Administration of the Central Offices of the Scotch Education Department and Audit of School Board Accounts	£ 22,320
2.	Inspection	41,482
3.	Grants for elementary education	1,759,394
4.	Grants for Continuation Classes, including Central Institutions and Secondary Education	166,500
5.	Grants for Training of Teachers	142,392
6.	Maintenance of the Royal Scottish Museum	15,203

It will be seen that, of the total, administration takes about 1 per cent, inspection about 2 per cent, elementary education 82 per cent, continuation classes and secondary education about 8 per cent, training of teachers about 7 per cent, and the Museum less than one per cent.

(A) The Education (Scotland) Fund.

This fund, constituted by the Education (Scotland) Act, 1908, amounting in the aggregate to about £500,000 a year, now "pooled" and distributed as per Act of 1908, consists of: (a) Residue Grant; (b) Grants-in-Relief of local taxation before the Act of 1908; and (c) similar moneys assigned by the Treasury to Scotland as a whole in consideration of corresponding demands which the sister countries made upon the National Exchequer.

The first charges upon this Fund are for such educational purposes as cannot be considered a proper charge upon the resources of any one district, *e.g.*

(1) Expenses of inspection and examination in connection with Secondary and Intermediate Schools, so far as unprovided from Parliamentary votes;

(2) Universities, if they can make out good cases for aid;

(3) Central Institutions (in respect of either capital or maintenance expenditure) when the benefits are spread over the country as a whole; including Technical Colleges, Colleges of Agriculture, Schools of Art, etc.;

(4) Maintenance of National Institutions and payments to Provincial Committees for the training of teachers;

(5) Retiring allowances to teachers if superannuation scheme authorized by the Act of 1908 is established; and any other educational expenditure approved by the Department.

The method of financing Central Institutions is this: From the total expenditures (first approved by the Department) deduct income from fees and find

total deficit; ask Board to state proposed expense for next year; after deducting from this the income from fees, pay the balance from two different sources—half from Imperial Exchequer, half as divided between (a) Local Authorities and (b) The Education (Scotland) Fund. If a Central Institution has certain endowments, the Department takes them to save this latter Fund.

Under this plan the Department aids Art, Commercial, Veterinary, Navigation and other special schools.

(B) District Education Fund.

After above general charges are paid, the balance of The Education (Scotland) Fund is broken up into District Funds. The Districts (subject to combination if found desirable) comprise 33 counties and the 6 largest urban school-board areas, viz., Edinburgh, Glasgow, Aberdeen, Dundee, Leith and Govan.

The distribution among these 39 districts is made to School Boards in accordance with schemes of allocation prepared by the Department and so framed as to give greater aid to those districts in which per head of the population the burden of expenditure on educational purposes approved by the Department is excessive as compared with the valuation of the district. That is, the money is to be allocated upon a principle which takes account both of the relative cost of education and of the relative wealth or poverty of the district to which the distribution is to be made, as well as population.

In the application of the District Funds the principle applied is that the first charges on the Fund prevail: that is, all expenditure on the general educational services of the district, such as are not properly referable to any one School Board area, ranks as a first charge.

The existing Secondary Education Committees are utilized in applying District Funds. In every instance the School Boards of the district are largely represented on these committees, which may, therefore, be expected to perform a useful function in relation to all those forms of education which it may be beyond the resources of single School Boards to deal with.

The following items are prominent among the first charges on the District Fund:—

(1.) School Boards which have established Intermediate or Secondary Schools are to be recouped for reasonable expenditure incurred in respect of pupils drawn from surrounding parishes. Only so far as a school of this type is a central school serving not merely the parish but the district will it receive financial assistance from the District Fund.

(2.) Similar provision applies to Continuation Classes of an advanced character "providing further instruction for pupils who have left school" also to endowed schools under due safeguards. (In 1910 the Department paid about £112,000 to Continuation Schools.)

(3.) The District Bursary Scheme enables duly qualified pupils in each and every part of the district by means of bursaries or otherwise, to obtain education at a recognized Intermediate or Secondary School; or at a Supplementary Course of three years; or, where deemed expedient, at an Agricultural College, a Tech-

nical College or other Central Institution, or at a University or Training Centre or Training College.

(4.) Payments may be made to the Committee in aid of travelling expenses and maintenance of special teachers whose services can be placed at the disposal of School Boards for instruction in technical subjects such as Agriculture, Horticulture, Physical Training, Cookery, etc.

(5.) One half the cost incurred by each School Board in providing medical inspection and supervision of pupils attending schools within their districts.

(6) Grants-in-aid up to one half of capital expenditure of any kind, such as provision of schools or rooms for physically and mentally defective, blind or deaf mute children; for school gardens, laboratories, rooms for cookery, laundry etc., workshops, equipment for the use of travelling teachers or others employed by the committees.

(7.) Such further sums as the Department may approve for the promotion of education within the district generally.

Relief of Rates.

After providing for the aforesaid payments and for the approved expenses of the Committee, the balance is to be distributed to the School Boards and managers of State aided schools within the district as an addition to the "fee grant", i.e., in relief of their ordinary expenditure.

The Department calls upon every Board to exercise the "critical function" of watchfulness as regards the first charges paid out of each District Fund, and to exert all legitimate influence to secure that no money is expended for district purposes without a reasonable assurance of adequate return. The chief end of this "critical function" is to insure the efficient and economical administration of the District Fund as a whole; and incidentally it cannot fail to have a high value as tending to foster the interests of individual Boards in the larger concerns of the district. This function extends also to the corresponding charges on the Education (Scotland) Fund itself—a circumstance which brings the several Boards into more direct and living contact with every element of importance in the educational fabric of the country.

Bursaries.

Secondary Education Committees have not been slow to avail themselves of the opportunity given by the Act of 1908 to make payment out of the District Fund of such sums as they deemed necessary to enable properly qualified pupils to proceed from Primary to Intermediate or Secondary Schools. The expenditure upon bursaries from District Funds alone during the year ending 15th May, 1910, was £84,800. If to this be added an approximate expenditure upon bursaries of £65,000 from separate Endowment Funds administered by the Committees or by the Governors of the Endowments, a total of £149,800 is reached.

Expenditure of this kind is a necessary corollary of the system of Secondary Education which it is sought to establish, and in the more sparsely populated

parts of the country it is the only feasible alternative to providing at great cost a greatly increased number of Secondary Schools. The sum stated is so large, however, that in some cases at least it is feared that it has been in its essence either a subsidy to the parent or a means of indulgence to the pupil rather than a *bona fide* outlay upon the means of education, as intended.

A committee on Secondary Education, or the School Board or Secondary School may establish and maintain hostels for Junior Students, Bursars, or other pupils attending Intermediate or Secondary Schools; and if after careful management a deficit should occur, it may be paid out of the District Education Fund with the approval of the Department.

(2) LOCAL FUNDS.

Finances of the School Boards.

There are in Scotland 970 popularly elected School Boards, and they administer locally in the parishes and burghs the primary system of public education. In addition, they manage Secondary Schools, Junior Student Centres and Continuation Classes. The facts and figures given below only deal with institutions managed by the School Boards, and in each type a considerable number of cases are not within the public system. The School Boards may, however, be taken to represent approximately the Primary system; and the Continuation Class system in so far as the latter is below the Central Institution standard.

The work done by the School Board system involves the education in Primary Schools of about 803,800 pupils on the register; in Intermediate Schools about 22,400; in Secondary Schools about 10,000; and in Continuation Classes about 100,000 young persons. Besides these there are the candidates for the teaching profession in the Junior Student centres.

These figures give an approximate idea of the volume of the work in which the moneys noted below are expended.

Income of School Boards.

The total income of School Boards for the year ended 15th May, 1909, was £3,649,416, and the expenditure £3,747,947. These amounts do not include balances. The income was made up as follows:—

1.	School fees and books sold to pupils	£ 96,999
2.	Grants from Scotch Education Department	1,543,287
3.	Grant under Local Taxation (Customs & Excise) Act, 1890, and Education and Local Taxation (Scotland) Act, 1892	51,172
4.	School Rates	1,427,707
5.	Loans	452,175
6.	Income from Endowments	16,922
7.	Other receipts	61,154
		£3,649,416

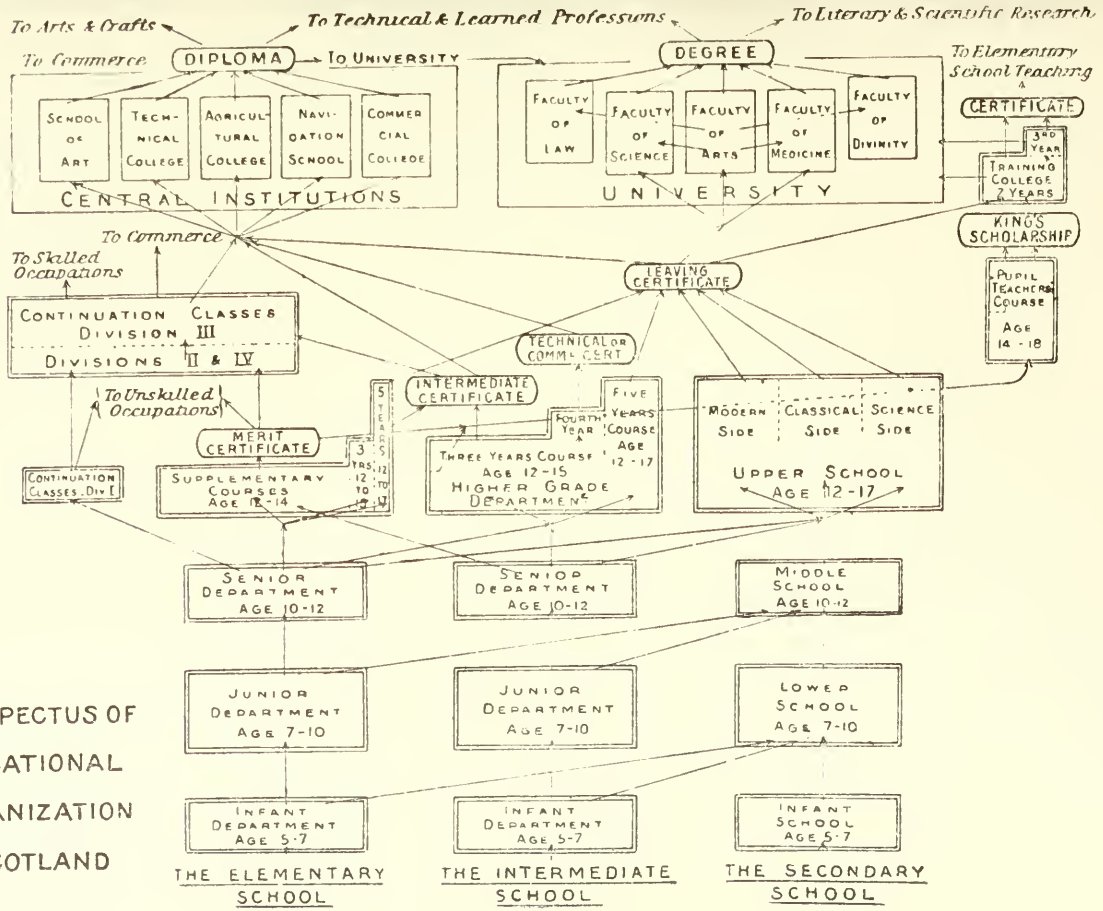
Expenditure of School Boards.

The total is £3,747,947, made up as follows:—

1.	Election of Boards	£ 14,746
2.	Salaries of Administrative Staff	83,781
3.	Salaries of Teaching Staff	2,050,522
4.	Sites and Buildings	483,942
5.	Printing, postage, etc	22,548
6.	Books, apparatus, stationery	106,525
7.	Rents, rates, etc	114,564
8.	Furniture, repairs, etc	121,358
9.	Fuel, light, cleaning	179,936
10.	Interest on and repayment of loans	473,897
11.	Other expenses	96,128
		£3,747,947

Finances of other Local Bodies.

The finances of the Secondary Education Committees, the Central Institutions and the Universities have already been dealt with in so far as seems necessary for the purposes of this Report.



CONSPECTUS OF EDUCATIONAL ORGANIZATION IN SCOTLAND

SESSIONAL PAPER No. 191d

CHAPTER XIII: CONVERSATION WITH SIR JOHN STRUTHERS.

Information obtained from "Conversation" with Sir John Struthers, *Chief Secretary for Education for Scotland.*

Department of Education and National System.

There was a common Department of Education for both England and Scotland to administer grants which were given for purely Elementary Education as long ago as 1837; but as the system advanced and education widened and the amount of money spent became more important, Scotland in 1866 was separated from England and got her own grants from the Exchequer for Scottish education.

A word about the Scottish National System of education is essential, because all preparation for advancement in industry and commerce runs back to the fundamental question of primary education. Without a sound general education it is hopeless to do anything to build up Technical Institutions.

Scotland has probably the oldest National system of education in Europe—a school in every parish, whose ideal was to enable the better pupils to fit themselves for the University, the entrance standard of which was low. Amid changes and troubles that system of Parish Schools, in charge of men fit to prepare selected boys for the University, has endured till now, though in several respects it became inadequate as time went on. It was supplemented in recent years, the modern state of things beginning in 1872, when an Act was passed establishing for every parish a School Board elected by the people, and charged with the duty of providing sufficient schools and means of education for the people of the parish. Essentially each of those School Boards is an independent body.

Compulsory Attendance.

In Scotland all pupils must stay at school till they are 14. The School Board has certain power in individual cases to dispense with that requirement in cases of pupils over 12; but the Act of 1908, on which the Boards are acting very well, suggests that if a pupil is let away at 12 it should be made a condition that he returns to school part of the year, say in winter time in the rural districts, or attends Continuation Classes in the evening in towns till 16. So instead of stopping altogether at 14 they go on till 16 at least; and under the Act of 1908 every School Board has power to make attendance at Continuation Schools compulsory till 17. The Boards hesitate about putting it in force at once, but a number have proposed compulsion, and it is working quite satisfactorily. A good many others, Edinburgh for example, are thinking about it. Glasgow has already proposed modified compulsion as a first step in that direction.

Act of 1872.

Under the Act of 1872 the Parish Schools and Burgh Schools continued and hundreds of new schools were established because the Act introduced compulsory education up to a certain stage.

There was really no separation between Secondary and Elementary Education; every parish did its best to give both. In some parishes there was no Secondary Education; in some there was a great deal. Anything approaching systematic provision for Secondary Schools was in towns or burghs; though the rural parishes taught a few selected pupils Latin, Greek and Mathematics more or less in the schoolmaster's spare time. As time went on what might be called a separate system of Secondary Schools was evolved by agreement and discussion, and that movement culminated in the Act of 1908.

Act of 1908—Secondary Education Committees.

The Secondary Education Committees instituted by the Act of 1908 are part of a plan to do things which each School Board cannot be expected to do for itself. The Committee is really a co-operative union of the School Boards of the district.

There is a Secondary Education Committee for each of the six largest towns, then one for each county. This Committee is composed practically of representatives of the School Boards of both districts. The Committees are composed in various ways. Those School Boards which maintain a Secondary School have a right to direct representation; others which have no Secondary School combine in districts and elect so many representatives, and there are members, to a small number, added from the County Council.

Stress Upon Conditions for Health.

The Act of 1908 lays great stress upon the health conditions of schools and children. Children who enter school will be medically examined, and re-examined at definite intervals, and special examinations will be made of all children reported by the teachers; the object of all this being to build upon the system of education measures for promoting the health of the country. Defective children found are set aside, and special education provided for them. If children come to school dirty, neglected and filthy, the School Board has power to summon the parent and ask the reason, and if not satisfied that the parent has been doing all he could, the Board can prosecute, and meanwhile take the child in hand. If satisfied that the parent has done what he could, and that the condition arises through insufficient means, then they have to feed and clothe that child till the parent is in a position to do so—the object being to make health considerations a much more important element than hitherto in the education of children, whether general or vocational—to make sure that the arrangements do not conflict with proper health conditions.

School Boards—Functions and Powers.

The Department has not taken away the original powers of the School Boards, which they hold as fundamental, because they want parents to be able to say that they have a direct voice in choosing the teacher most suitable for the district, and in controlling to a certain extent the education of their own parish.

The school is always under the control of the Local Authority, which engages the teacher and takes all responsibility for the buildings. It gets grants from the Secondary Education Committee, but more or less on a fixed basis according to expenditure that has to be approved by the Department, and the Committee can remonstrate either way.

If a School Board fancied some apparently eccentric and absurd scheme of education, it would be at liberty to carry it out in its schools, and by law the Department could not do anything; but of course it does exercise enormous influence by giving grants to School Boards if they do certain things, and a School Board would have to carry out those absurd and eccentric courses entirely at its own expense, by means of a rate levied upon the parish. If a course of education does conform to the Department's regulations, then the Board get probably 50% of the whole cost; so that naturally there is a strong inducement to follow what everybody would think a proper course. The Department has a veto, but at the same time the Local Authority is independent in this matter and in fact has very considerable freedom in varying its courses of instruction within the Department's general regulations to suit its particular view. The Department tolerates all sorts of things by way of education in a particular parish, though they may think them unreasonable. It would be perfectly hopeless to thrust anything on the parishes on the ground that it would benefit the locality, if the School Board did not approve of it. In such cases the Department could only go on reasoning and hammering at them, but doing it in a reasonable spirit, with a little humour now and again. (Sir John added that he sometimes thought the Scotch were the only people in the world who appreciated humour).

Suggestion for Canada.

Sir John remarked that Canada, having no State Church, afforded a fine opportunity for what might be called an "Established Schoolmaster" in every Township—not to be simply a teacher, but to take charge of the general education of a place and see that the standard of culture was kept up in that district. He had observed also that a majority of Canadian teachers were women; and while he had the highest admiration for women teachers, especially in junior classes, experience in Scotland had shown that it was absolutely essential for satisfactory education to have a man in every parish who is more or less in charge of education in the district, and who sets a standard.

Vocational Instruction and General Education.

The feeling has been growing for ten or twenty years in favour of vocational instruction, that is, for direct application of education to some individual means of earning a livelihood, whether profession or trade. Yet even now the great subject of education in Scotland is general education; and though they are advancing very rapidly in the direction of special education, they regard the soundness of their Elementary and Secondary Education as the most important object they can possibly have in view, and that anything else done must be entirely subsidiary to that. Yet a feeling has been growing that general education may be too general; that when a boy leaves either Elementary or Secondary Schools he is going to earn his living in some particular way, and therefore it is well that in school his mind should be directed towards the kind of knowledge likely to be useful in his future occupation.

That is provided for both in Elementary and Secondary Schools. At 12 years average children are supposed to have completed what might be called a purely Primary Education; to have had good sound instruction in Reading, Writing, Arithmetic, some knowledge of Geography and History, some practice at Drawing, and some knowledge of Nature Study. For children who have not left the Day School at 12 there are courses classified roughly as Commercial, Industrial, Rural and Girls' Courses in Household Management; and in every school of any size which takes pupils beyond 12 the aim is to have one or more of those courses according to the size of the school and the nature of the locality. Those courses are making very great progress, and are very much appreciated. They are given by the regular teacher, and large town schools generally have sufficient teachers who have specialized in one or other subject to provide the necessary instruction in these Supplementary Courses more or less completely. In the country districts of course this cannot be so, and the County Committee is supposed to come to the rescue and provide a special staff of teachers of different subjects who will circulate through the county according to proper arrangement.

In the case of apprentice boys and girls in town shops, the difficulty of dealing with the employer is very great. A good deal of progress is being made in Edinburgh and Glasgow in the way of getting employers to make special arrangements for day classes, but substantially the continued education of those who have gone to work in towns is provided in the Evening Classes, which are connected with the Secondary Institutions.

Vocational Training and Special Occupations.

The almost universal notion in Scotland is to give a boy the best general education possible as long as he will remain at school, and then let him go into the particular line of life he is to follow. Once he knows what further knowledge he needs, let him come back and make special arrangements for instruction; but so far as he has to acquire technical skill (manipulative skill), he would do that far better while earning his bread in remunerative employment.

There is another function that a school can fulfil in that connection. In very many industries specialization prevails to a remarkable extent, and an apprentice may be working for years at only a little snippet of the whole thing, so that as to manipulative skill he is perfect, but he has not an all-round knowledge of his business. Such training is defective, and technical classes could supply what he does not know about it technically, as many of the Scottish institutions do. For example, in the Glasgow and West of Scotland Technical College there are classes for boiler-makers and every occupation of the district, in which the instruction is not merely theoretical but practical—not practical in the sense that a boy is trained to become a boiler-maker before he is a boiler-maker; but when he is a boiler-maker they say, "Now, here are certain things you want to know about the business, more or less theoretical, and there are certain other things you ought to be able to do". Then by arrangement with the trade they provide classes in the day-time, in the evening, in the morning, at all sorts of times.

If the grocers, for example, said they would like classes for the instruction of their hands, the Technical College would consider it, see what sort of attendance they might expect, invite two or three leading men in the industry, both employers and workmen, to join with some of the governors of the College in forming a Special Committee for a class of that character. Then they would search about for suitable instructors, and start a class in the College. That would happen in a lesser degree in Intermediate Centres such as Kilmarnock, and Hamilton, but could not be got in the smaller villages.

Trade Instruction.

The West of Scotland College in Glasgow has a system of trade instruction worked out probably as well as anywhere in the world. It is not a system of preparing boys before they leave school for some industry; it supplements the workshop with instruction which the shop does not give, either theoretical, or it may be mechanical, in so far as the boy has been restricted to a small part of his trade.

The shipbuilders have arranged for some of their apprentices in the College. The apprentice works for a year; then they let him off to attend the Technical College in the winter, the employer paying his wages; then he goes back and works at shipbuilding in the summer. That goes on for three or four years and in the final year they let him go to College a full year without going to the workshop at all. They pay him according to arrangements made by individual firms. Many have gone the length of paying the apprentices' wages for the full time, even though they may have been out of the workshop for a whole year.

Continuation Classes by School Boards.

What are called Continuation Classes had been in existence in Scotland for a generation, but as a rule flourished only in larger centres of population, which was very natural, because the classes were usually held in the evening

and difficulties of evening instruction in the country were patent. The Act of 1908 allows Boards to hold such classes in the afternoon or daytime, and suggests that in rural districts the pupils should attend the ordinary Day Schools in the afternoon, say through the winter months, but instead of being put into a class and taught along with other pupils, should be regarded as students studying on their own hook, the schoolmaster giving them advice and assistance at such times as he can spare. It is really reviving an old practice in Scotland, when farmers' sons and such people, who had long left school and were working on the farm, attended for two or three months in the winter time and studied their own particular subject—land surveying, improving their arithmetic, or anything they had a fancy for, the schoolmaster being at hand to give them what assistance they wanted.

The Act has brought a tremendous increase in the number of School Boards that have started Continuation Classes or made arrangements for the further education of children; and the Department hopes, by the usual kind and persistent pressure and reasoning, to get this practice made practically universal. These courses are largely in the evenings, but in the rural districts the day-time is possible and desirable because of the farm work in winter, where special arrangements can easily be made to allow pupils off.

Continuation Classes by Employers.

Scotland has a fair number of instances, not very many, of individual firms starting Continuation Classes and continuing them on their own responsibility. They get a grant from the Department, but bear the deficit of expenditure which the Local Authority would have to bear. If it is recognized as being a proper institution, with proper teachers, etc., and if the Local Authority offers no objection, the Department gives a grant.

The North of Scotland Railway Co. maintain Continuation Classes in connection with their railway shops at Inverary, and do not call on the Local Authority to contribute anything. In the case of that railway school the Department pays roughly three-quarters of the expenditure.

All the Department's grants are paid to the managers of the schools, not to the Local Authorities, and it is for the Department to decide whether the school was one deserving State support. Whether it was under the School Board or under a body of private managers was immaterial; but as a matter of courtesy and good arrangement the Department always consulted the Local Authority as to the necessity for the school and as to why they did not take it up themselves.

Vocational Training in Secondary Schools.

In reference to vocational training in Secondary Schools, Sir John said he was speaking more of what he hoped they would have than of what had been actually achieved, because of the very, very strong trend in favour of general education in the Secondary Schools, and the difficulty of getting them to arrange a special course for entrance to any particular kind of institution other than

a University. Yet in a fair number of centres the possibility of pupils going to the Technical College is being kept in view.

The stimulus for the establishment of a Technical Class is very often supplied by the people; it depends a good deal on the district. The School Board or the Secondary Education Committee has part of this duty, and lastly the Department and its Inspectors, who make sure that this matter is being considered. The latter form a very useful means of getting matters considered by the local people. The 67 Inspectors—28 full Inspectors and 39 assistants—cover a population in Scotland of about 4,500,000. The Inspector is the responsible person to whom all instructions are conveyed. The 28 inspectorates are arranged in four groups. There are now three "Provinces" and it was necessary for special reasons to make the North West Highlands a special district.

Specialized Courses in Secondary Schools.

In the Secondary Schools the principle of general instruction is strong, and they do not admit any specialization until pupils have got the Intermediate Certificate, at about the age of 15 or 16. Till that age every pupil is following the general course. Of course there is a certain amount of latitude, English being the all-important subject. The course includes also instruction in another language, ancient or modern, according to choice. Mathematics, History, Geography, Science and Drawing are the other five main subjects. After pupils have obtained the Intermediate Certificate the Department asks the Secondary School to propose any more specialized course, such as they think best suited for their pupils in view of their future occupation. Of course the majority of the pupils who stay on in a Secondary School to the age of 15 or 16 have in view a University course. The great bulk of the instruction, even after that stage, is on the same old University lines; but a certain number aim at going to a Technical College to prepare for engineering and such like professions, or to Agricultural Colleges; and if a school has a staff and equipment for it they will make a special course suitable for those pupils.

In the case of girls the Department very strongly presses the formation of special courses for those beyond 15 who have the Intermediate Certificate, to prepare them for managing a house in every way, Cookery, Laundry Work and what is called Housewifery forming the basis of the course. They always have English. They probably go on with a modern language which they have already studied, and according to their taste will continue Drawing or take up Music. They like to stay from 15 to 18. A good many take that three years' course, though a good many drop off after two years.

In all towns of very considerable size there is instruction in Woodwork for boys over 12. In the country districts there is a much greater diversity. It is a case of slowly getting teachers qualified, or of one county being more active in that direction than another. But the goal which it is believed will soon be reached, is to have Woodwork for boys of 12 and upwards as a general subject through all the Primary Schools, just as Drawing is at present. For boys of 15 the Department favours special courses, such as the Commercial Course

or that preparing for the Technical or Agricultural College, which will be optional with the locality, which has the authority.

Local Management with Central Guidance.

This combination of local management with central guidance—which is not absolute control, but approaching control—Sir John considered of enormous value; for while any system by which each parish in Scotland was left to provide the education itself might be a great deal cheaper than at present, it would be hopelessly insufficient; on the other hand, any system by which the Department took the management of all the schools, while it might be more economical than the present arrangement, would not be so satisfactory in many ways. Sir John wanted many brains actively thinking about these problems; and these cannot be got to think to purpose unless they are given responsibility.

There are certain things which even the counties cannot do for themselves, such as the training of teachers (which in Scotland is a national matter); also, University Education, the work of Technical Schools, Colleges and Schools of Art. There cannot be more than two or three outstanding institutions of the highest kind in a country the size of Scotland. Hence, in addition to the School Board for every parish, and a County Committee for every county, there are bodies for Teacher Training and for Higher Technical Education in each of the three "Provinces" which, for purposes of educational administration, were formed to centre around each of the Universities—Edinburgh, Glasgow and Aberdeen.

System of Organization and Co-operation.

The system of organization is that in each "Province" in Scotland there is a Technical College and a School of Art; also a School of Domestic Science and an Agricultural College. These are the centres of operations; they give the most advanced instruction, and School Boards are asked to frame courses which fit into those of the Technical College, etc. That is gradually being done, so that a coherent, organized system of classes is being obtained. A conference was arranged between the Glasgow and West of Scotland Technical College and the Glasgow School Board, which till that time had not been co-ordinating their work. With difficulty they were persuaded to have a common system of organization in which the objective of the Continuation Classes conducted by the School Board should be the Technical College, and which would be beneficial to the pupils to the extent to which they carried it. Of course the co-ordination is a loose one, no rigidity being insisted on, but the Glasgow and Govan School Boards accepted the proposal, and now it has spread over practically the whole of the south-west of Scotland; so that classes in Kilmarnock, Dundurn, Paisley, Greenock, Hamilton, and many other places are all directly linked on to the Technical College at Glasgow.

A certain amount of work done locally counts for so much work done in the Technical College, and a student who has completed the course at certain

other institutions, called Intermediate Centres, can pass on to a more advanced class in the Technical College. Each of those centres at Kilmarnock, Paisley, etc., is in turn a sort of centre of operations for all the smaller Continuation Classes held throughout the villages and country districts. The ideal, which has been largely accomplished, but is not absolutely universal, is to secure a certain coherence in the whole thing. The Technical College with the consent of the School Boards appoints one of their men, who now makes it his sole business to go round those schools and discuss with the managers what they might do and what they should aim at, how classes should be arranged, etc., also to report as to the quality of the work done. The Department asks him to send his report to their District Inspector, who adds such observations as the Department thinks proper before sending it to the manager of the school. Of course anything added is merely a suggestion, and has no legal authority. The system is based upon securing willing agreement, and it is only in the very extreme cases that the Department resorts to orders.

The Provincial Committee does not deal with co-ordinating between the Local Authority and the Technical College, because it specializes on the training of teachers. The Central Institutions are regarded as coming in the place of the Training Colleges, and the governors of the Centrals and of Agricultural Colleges as corresponding to the Provincial Committee for purposes of organization of Technical Education.

The Agricultural Colleges.

The Agricultural College of a "Province" is under the management of a body of governors chosen by the separate counties throughout the "Province" with the addition of some representatives of the University, the Town Councils, etc., so that essentially the Agricultural College of a "Province" is under the management and influence of agricultural opinion in each of the counties that it serves. The institution is not, as in England, merely a College whose sole business is the training of from 30 to 100 students who are making a systematic study of agricultural subjects, and having nothing to do with the Training Authorities. In Scotland the Agricultural College is really a combination of the Agricultural Authorities—using that term for a group for half a dozen or more counties which can be combined for the advance of agriculture in the district. The training of a body of students who are going through the full course in the College is in a way only a by-product, and not the important object, which is the development of agriculture in the district by any means the College can employ. Obviously this process of relating to the College the instruction on agriculture in the Continuation Classes is one of the purposes.

Agriculture.

The business of the Agricultural College in each "Province" is to draw up special schemes of instruction in Nature Study—not agriculture, but more general foundation for the specific study of agriculture—suitable for the schools of that

DUDDINGSTON, EDINBURGH: WORKING ON VEGETABLE PLOTS.

DUDDINGSTON, EDINBURGH: FRUIT PLOT.

KETTINS, FORFARSHIRE: CLEANING VEGETABLE PLOTS.

KETTINS, FORFARSHIRE: ROCKERY AND HERBACEOUS SECTION.

district, and including the practice of gardening or School Gardening. When these are started by the School Boards the officials of the Agricultural College visit and advise with the teachers, and report on them to the Department's inspectors, who include in there general report on the school the remarks of those specialists on that particular subject, who are asked by the Department to advise, inspect and stimulate. The Department cannot have all sorts of people running in and out of the schools; and all this visiting of teachers from special institutions such as the Agricultural Colleges is done in a certain systematic way which the Department can control so that the school is not unduly interfered with, and so that there may be something like consistency in the advice that is being given to the school.

The report of such an officer of the Agricultural College goes first to the Department's Inspector, who sends it to the Department, which in turn sends it to the School Board who manage the school, with any additional comments they want to make; and if there is any reason for so doing, the Department sends a copy of that to the Secondary Education Committee.

In the County of Fife there is a combination of purely rural, mining, industrial and all sorts of classes, The School Boards make provision for Primary Education and the less advanced Continuation Class work; and the central towns provide, in addition, first-rate Secondary Schools. A strong Secondary Education Committee supplies specialist teachers for mining and other branches to circle around the district.

Parish Schools and Bursaries.

In Scotland the traditional desire of some parents is for one of their boys to go to the University; and that applies very strongly in the more remote districts where there is no industrial activity. The most interesting instance is the Island of Lewis, where the population of 30,000 lives on what is largely a peat bog—just about the dreariest conditions for existence imaginable—and frightfully poor. Yet at Stornoway in recent years, under the system described, the Secondary School is filled with pupils from all parts of Lewis who are kept there by means of their bursaries of incredibly small amounts. In proportion to its population Lewis is turning out for the final Leaving Certificate (fitting for the University) a larger number of pupils per thousand than any other part of Scotland. It is astonishing. Many lads from the almost abject poverty of the crofter's house get on to the University and make their mark in after life. The same sentiment prevails in a place like Caithness, which has one of the highest records of pupils obtaining the Leaving Certificate. Banff and Aberdeen are also characteristic in that way. On the other hand, Glasgow, Fife and the Midlothians—all those industrial districts—are quite low down in the proportion of pupils who reach the scale of Secondary Education which fits them for the University.

Intermediate Schools, "Centres" and Bursaries.

Under the Act of 1908 the School Boards and Parish Schools are continued, but in addition there is scattered all through the country, a class of Intermediate

Schools taking pupils to 15 or 16 for Secondary Education. Lastly, a smaller number of what might be called fuller Secondary School take pupils up to 17 and 18 and prepare them directly for the Universities—the standard of University education having in the meantime advanced enormously.

There is no rigid separation of the Elementary School from the Intermediate and Secondary. The old Parish Schools have full liberty to carry their pupils as far as they can, but the Department advises the school, in the pupil's interest, not to keep him at the original school for the honour and glory of the teacher, but to send him as soon as possible to a proper Centre. For that purpose there is a provision of money for Bursaries under the Act of 1908; so that if a boy in a Highland glen is found to be a promising pupil, the teacher gives him some instruction in secondary subjects, and then advises him to go to a Centre, there being always one within half a dozen miles or so. If the boy cannot travel home every day, and has to board at the Centre, he can get an allowance to help meet the extra cost by applying to the Secondary Education Committee. The principle is that it would be too costly to put a full quota of Secondary Schools in every parish, so it is made possible for the boy who lives in the most out-of-the-way corner of Scotland to be in the same position as regards Technical Education as if he were living next door to the Secondary School.

The Bursaries are not awarded by competition; it is a case of the boy being sufficiently qualified, as shown on an examination for that purpose. The parents may represent to the Secondary Education Committee, more or less confidentially, that they cannot afford to keep the boy at the Secondary School, and he gets help "as a matter of right"—as it is put in the Department's circular. At the same time the Department does not want to make it a matter of absolute right so that a head pupil's parents, who are wealthy farmers or have big incomes living far away from Secondary Centres, can come and say, "You must pay the whole of my boy's education at a Secondary School."

The Bursary plan referred to applies also to the Technical Classes. The Central Committee of each county has funds at its disposal from which it can make grants to assist students to go further than the district, to another Centre, for technical instruction. Thus if a boy did not live in Glasgow he could yet get the benefit of the Technical College there. The plan does not give him absolute equality, but it does a great deal to mitigate the inequality as between young men living in Ayrshire and those living in Glasgow.

Training Teachers for Technical Education.

A Provincial Committee, which consists of representatives of the Universities and higher Technical Schools, provides for the Training of Teachers. In order to become a teacher of even a Primary School, the candidate must go through a general course. Beyond that the Department offers him the opportunity of getting special qualifications. For example, for teaching in Rural Schools, he can secure qualification through a certain course in Agriculture and subjects relating thereto over and above the rest of his work. That instruction is to be got either at the Agricultural College or through Instructors sent out from it, or through people specially approved by the College.

Scotland has not had difficulty in the selection of special teachers in the technical and industrial field as between rival factions wanting to have a man who is affiliated with organized labour or as representing free labour. That point is never enquired into. The Local Authority makes the appointment, and invariably sets itself to enquire who is the most capable teacher of the subject, and not whether he is a member of a Union or not. It is only very accidentally, or probably for some special personal reasons that the question whether a man is a member of the Union or not ever comes up for consideration. The Department has had no hint of any local difficulty where prejudice might be shown against one teacher and in favor of another in that respect.

There are no Central Institutions or others in Scotland doing Trade School work—teaching a trade as such—and there is no movement in favor of it at present.

In Elementary Technical Schools in towns and cities, for a subject like Engineering, the Department would expect as teachers not merely mechanics of ability, but graduates of Technical Colleges. For an ordinary handicraft subject they want capable workmen who can teach. Experience of Continuation Schools had made them distinctly doubtful of having technical subjects taught well by the ordinary school teacher. He would do perfectly well in Arithmetic or Mathematics applicable to technical industry, but technical instruction requires men who are masters of their craft or business. In textiles you must have a man who is really a capable spinner, weaver, dyer, etc, and the difficulty is to get men who combine that knowledge and ability with sufficient general education and power to teach. In the larger centres there is no difficulty in getting such men by offering decent salaries, but in smaller classes, less advanced, there is difficulty. If choice must be made Sir John was very distinctly in favour of the man who knows the practical work and can do it; teaching ability will come from practice. In large towns like Edinburgh short courses in the art of teaching are being provided for such people. These help them to know more or less how to handle the classes. The engagement of those men is left entirely in the hands of the Local Board or the County Committee, and as a rule, except in large towns, the latter make the selection.

"Education for Scotland Fund."

"The Education for Scotland Fund" has a most complicated story. It is constituted of amounts, which as grants-in-relief of local taxation, were given to education. They have been "pooled" and re-allocated for various purposes, the first one being the maintenance of Central Institutions; next, the maintenance of Secondary Schools; thirdly, the provision of Bursaries to enable suitable pupils to attend Secondary Schools; fourthly, various other matters which a small School Board cannot reasonably be expected to do for itself, and which a combination of Boards represented in a County Committee can do for all the parishes collectively, such as providing teachers of special subjects. Thus if a parish is not able to employ a teacher of Cookery all to itself this Committee employs several and circulates them around the several districts. So with

manual work, woodwork and other subjects. The County Committee does that.

Other Funds for Technical Instruction.

The Department spends in grants for Continuation Classes about £112,000 a year. That is exclusive of the grants to the Central Institutions. For Continuation Classes the Department makes the grant according to attendance paying three-fourths of the expenditure after deducting revenue from fees. There are a number of schools or classes which do not get quite three-fourths of their expenditure.

The plan of financing Central Institutions is to take the total expenditure which has first been approved by the Department, ask the Board of Governors to state their proposed expenditure for the next year, with usual increases or diminutions and reasons, and after deducting from that the income from fees, to pay the whole balance from two different sources—half from the Imperial Exchequer, and the other half about equally from rates by the Local Authorities and from the Education for Scotland Fund. If the Local Authorities exceed the estimated deficit, and the increase is reasonable, the Department admits it. If a Central Institution has certain endowments, the Department takes them to save the Education for Scotland Fund.

How the Education Fund is Divided.

There is a point that the authorities are beginning to recognize now. The first charges upon this Education Fund are those for the training of teachers and the maintenance of the Central Institutions. When those are served, the balance is divided to the various counties according to population, and inversely to their valuation—the richer a district the less it gets per head of the population. Then the first charges upon the County Fund are the proper maintenance of Secondary Education, provision of Bursaries for Secondary Education in the district, the supply of circulating teachers, and one or two minor items such as medical inspection.

After those are satisfied the balance is distributed pro rata to the School Boards of the county; so that if the Department spends more upon the Central Institutions there is so much less to distribute to the counties; if the counties spend more on the Secondary Schools, Bursaries, etc., there is so much less to distribute to the School Boards. What the School Boards get is used in relief of the rates; so that really every halfpenny spent on the Central Institutions means something out of the pocket of the ratepayer in the long run. That works well, having the great advantage of securing proper attention to advanced education which did not appeal to the ratepayer. If the Department said, "The maintenance of these Central Institutions is to be a charge upon the local rates," the whole of Scotland except two or three sections would object. Under the existing plan, since the Department is charged with the administration of the law, of the Parliamentary grants and of the Education for Scotland Fund,

whether more or less is to be spent out of the County Fund on Secondary Education—with less going to the School Boards for the relief of rates—depends to a certain extent on the Department, which has to be guided more or less by what they feel to be the local opinion.

Financing Schools of Art, Etc.

The three large Schools of Art in Glasgow, Edinburgh and Aberdeen—the two first being of the very highest rank, with many features of highly specialized ability in their particular lines, and with an abundance of students and a very high reputation in the Art world—are financed on the lines described for Central Institutions. In Glasgow, Edinburgh and Aberdeen the Colleges of Domestic Science or Household Arts, the Commercial College (called the Athenæum) in Glasgow, also the Veterinary College, and the Navigation School at Leith are all maintained in the same way. There is not sufficient local support for those schools, so the Department meets the whole expenditure after deducting revenue from fees, half of amount being from the Education for Scotland Fund.

One half of the expenditure for buildings and equipments for these Schools of Art and Domestic Science Colleges is met by the Department if their plans are approved, and the other half is found by the locality, through subscriptions or otherwise.

There are separate grants to the Universities, which are partly directed towards scientific education.

Development Fund for Research.

Lately a Development Fund has been established for the United Kingdom to aid many things, such as agricultural research; and institutions such as Agricultural Colleges in Scotland may be expected to develop research work through grants from that source. So far as agriculture depends upon information, instruction and advice, all operations will be conducted through these Agricultural Colleges. There is a Development Commission for the three Kingdoms which administers the Fund to the extent that grants are not paid from it except upon the recommendation of the Development Commission. Any body of persons or any government department may make application to the Commission for a grant for a specific purpose, and justify their application. The Scottish Department made application lately to the Development Commissioners for a grant for the Agricultural Colleges in Scotland, and got a grant for capital expenditure of £60,000 and a promise of an annual amount which depends upon circumstances.

SESSIONAL PAPER No. 191d

CHAPTER XIV: ORGANIZATION OF EDUCATION IN EDINBURGH.

SECTION 1: THE EDINBURGH SYSTEM.

The capital of Scotland has always held a high place in the provision of education, and the juvenile part of the population enjoys facilities in all grades which are probably unsurpassed elsewhere in extent and quality. The number of independent bodies concerned with the problem of education is great and these engage in an honourable rivalry in which, under the guidance of the Scotch Education Department, little of overlapping or unhealthy competition is to be discerned.

The multiplicity of administrative bodies, and the mutual relations of the various types of institution, present a difficult and perplexing problem. It will be seen, however, that beneath this apparent complexity there lies a well ordered and organically articulated system, in which may be found most of the elements demanded by the modern theory of education.

The following classification may be given:—

A. University Education.

1. The University of Edinburgh, with faculties of Arts, Science, Medicine, Law, Divinity and Music.
2. School of Medicine of the Royal Colleges.
3. The Edinburgh School of Medicine for Women.

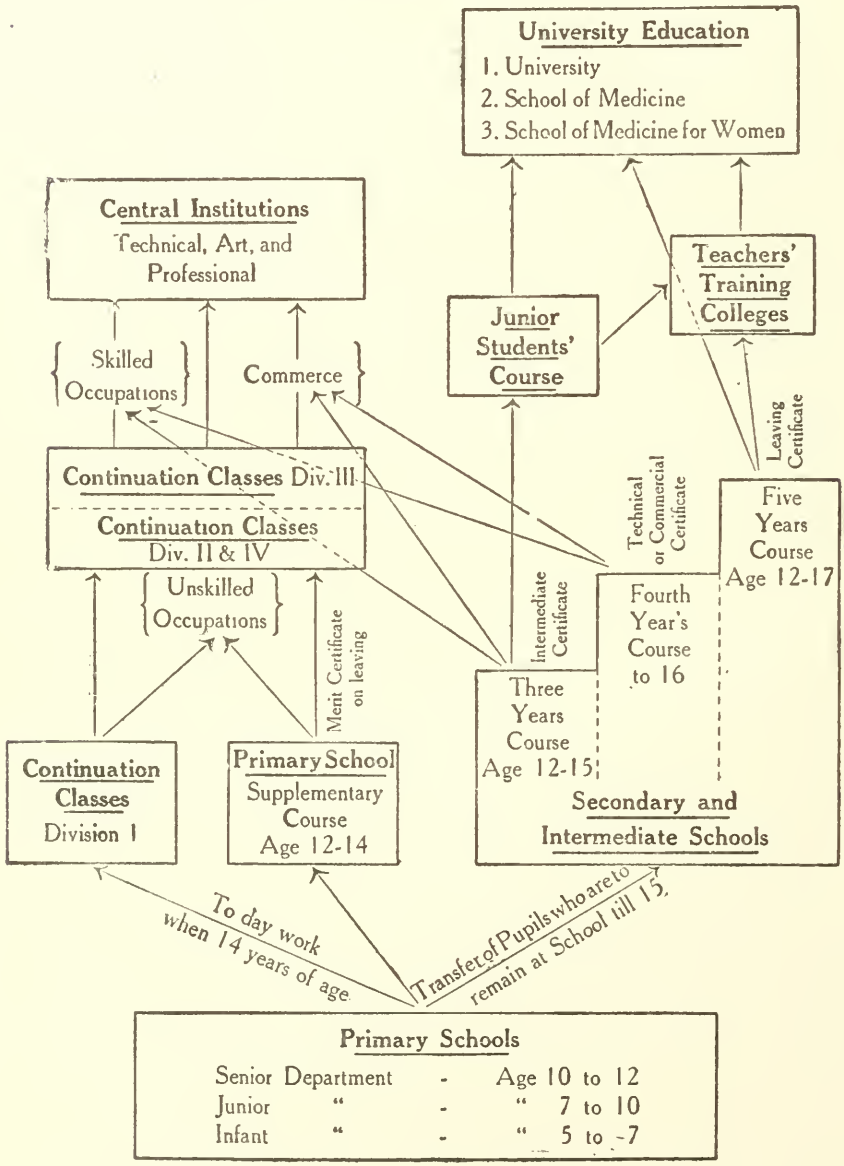
B. Technical, Art, and Professional Instruction.

1. The Heriot-Watt College.
2. The College of Art.
3. The Royal (Dick) Veterinary College.
4. The Dental Hospital and School.
5. The College of Agriculture.
6. The School of Cookery and Domestic Economy.
7. The Training Colleges for Teachers.
8. The Continuation Classes of the Edinburgh School Board.

C. Secondary and Intermediate Education.

1. The Endowed Schools.
2. The Private Schools.
3. The Schools of the Edinburgh School Board.
4. Junior Student Centres (Training of Teachers).

Diagram shewing the connection between the various Types of Institution



D. Primary Education.

1. The Schools of the Edinburgh School Board.
2. The Voluntary Schools.

E. The Special Schools and Institutions.

1. Endowed Hospital Schools, viz.:—
   Donaldson's Hospital.
   John Watson's Hospital.
   Trades Maiden Hospital.
   The Orphan Hospital.
2. The Royal Blind Asylum and School.
3. The Institution for Deaf and Dumb.
4. The Special Schools of the Edinburgh School Board:—
   Willowbrae Defective.
   Duncan Street Defective.
   St. John's Hill Day Industrial.

Administration of Education.

It will thus be seen that a very ample and diversified system of education exists. From the number of institutions and the variety of public bodies concerned in their management, there ensues that vigorous and widespread interest in educational welfare which is characteristic of Edinburgh.

One part of the system is, however, wanting. There exists in the city no central institution for music which would link up such instruction as is given in the Primary and Secondary Schools to the advanced work done by a relatively small number of students in the University, although in Evening Classes in the Heriot-Watt College instruction is given in the theory of music.

The population of Edinburgh in 1910 was 320,315, and the number of persons engaged in the work of education, as members of managing bodies, administrative officers, teachers of all grades, and subordinate workers, may be stated at not less than 3,500. The annual expenditure on the whole system is approximately not less than £500,000 ($2,400,000); and in spite of the great number of independent managing bodies it may be said that the expenditure results in an efficient and characteristic system. When it is borne in mind that in each local area of England under the Act of 1902 the co-ordination of all grades of education is promoted by one local Education Authority, it will be realized that the efficiency of the system of the Scottish capital gives strong evidence of the cordial co-operation and high aims of the many bodies engaged in the work of education.

The work of the office of the School Board is divided into the following departments:—Elementary Education, Higher Education, Medical, Educational Information and Employment Bureau, Stores, Works, School Attendance, and Finance.

Vocational Guidance.

The Edinburgh Board has a full Medical Inspection staff and an Employment Bureau of proved success. The former attends to the physical welfare of the child throughout his school career; the latter picks him up as soon as he is near the leaving age, advises him as to the pursuit for which he is fitted and as to the opportunities for employment in the city; and frequently secures him a position under satisfactory conditions. The employers of the city are in active and cordial co-operation with the Bureau, and also with the highly-organized system of Continuation Classes which the Board has established.

Educational Finances.

The revenue of the Board applicable to the year ending May 15th, 1910, came from three sources, as follows:—

(1) *From Government (per Scotch Education Department):*

	£	s.	d.
Day Schools: (*a*) Code Grants	50,255	19	9
(*b*) Relief of Fees	21,000	0	0
Continuation Schools: (*c*) Code Grants	9,139	2	1
From Education (Scotland) Fund	22,275	13	11
Total Income from Government	£102,670	15	9
(2) *From Local Rating Authority*: School Rate	138,000	0	0
(3) *From miscellaneous sources:* Fees, books, etc., sold, Endowments, etc	6,719	6	7
Total from Rates, etc	£144,719	6	7
Total from all sources	£247,390	2	4

Of the total revenue the sum of £44,484 2s. 2d. was expended in the repayment of loans (principal and interest) and in respect of capital expenditures not covered by loans. When that amount was deducted from the income from rates, etc.,the sum of £100,235 4s. 5d. remained to be applied to maintenance, together with the sum of £102,670 15s. 9d. from the Government.

The maintenance expenditures were as follows:—

(1) *Education Expenses:*

	£	s	d
(a) Day Schools	176,301	1	10
(b) Continuation Schools	14,955	19	4
(c) Administration, Etc	10,592	6	5
Total	201,850	7	7

The percentage of the total expenditure of each of these three items is as follows:—(a) 71·6%; (b) 6·1%; (c) 4·3%.

The increased provision made for Education in Edinburgh by the Local Authorities is shown by the yearly amounts from the rates, as follows:—

Year.	Population	Amount. £
1880	235,670	23,356
1890	302,262	52,170
1900	317,459	99,106
1910	320,315	138,000

SECTION 2: PRIMARY EDUCATION.

Classification of Pupils.

In the 39 Primary Schools under the Board the classification of pupils follows lines laid down by the Scotch Education Department, viz. —Infant Division, in which instruction is provided suitable for children under 7 years of age; Junior Division, for children between the ages of 7 and 10; and Senior Division, for pupils between 10 and 12.

Liberty of classification irrespective of age is, however, permitted provided that satisfactory reasons can be shown for the retention of children in any Division beyond the ages specified.

The instruction given in these Divisions is so graded that the pupils are led by easy stages to the standard of attainment necessary for the Qualifying Examination, which forms the gateway to the Higher Grade School or to the Supplementary Courses provided in 32 of the Primary Schools.

General Features of Primary Curriculum.

The following is an outline of the instruction given in the four Divisions, though the Curriculum varies slightly in detail to meet requirements of school districts.

In all Divisions provision is made for instruction in Reading, Writing, and Arithmetic, according to their degree of advancement; also in Physical Exercises, Singing by note, Drawing, and the committing to memory of pieces of poetry of literary merit, while girls receive instruction in Needlework. In addition a certain time is devoted to Religious Instruction and the teaching of temperance, and every opportunity is taken to train the children in habits of punctuality, cleanliness, neatness, and good manners, and in the duty of consideration and respect for others.

In the Infant Departments the instruction is necessarily of an elementary nature, and full use is made of Kindergarten methods.

In the Junior Divisions a start is made with the study of Geography; practice is given in the speaking of English; and Nature Study is introduced, the object of the latter being that children may obtain by means of observation

and inquiry a knowledge of common objects, natural phenomena, and School surroundings. In the Senior Divisions the foregoing subjects are continued and amplified, and the study of History is introduced.

Instruction throughout the Divisions is so graded that normal pupils may complete this stage about the end of their 12th year, when, on being certified by the class-teacher and by the Headmaster to be of good proficiency in class work, they are presented to H.M. Inspector for approval of enrolment in a Supplementary Course or Higher Grade Department.

This presentation is termed the Qualifying Examination.

Pupils so presented are expected:—

(*a*) To read at sight with good pronunciation and intelligent phrasing, narrative prose of moderate difficulty.
(*b*) To write to dictation with good spelling and legible and regular handwriting.
(*c*) To answer questions as to the subject matter of, and the meaning of words and sentences in the class reading-books.
(*d*) To write a composition, the heads being given, or to give in writing the substance of a passage read.
(*e*) To know the four rules of arithmetic as applied to whole numbers, easy vulgar fractions and decimals to three places, and to be expert in applying this knowledge to the calculation, both mentally and on paper, of simple sums in money and in the common weights and measures.
(*f*) To be reasonably proficient in the other subjects included in the scheme of work of the class.

The qualifying stage being passed, those pupils who aim at obtaining the Intermediate Certificate enrol in a Higher Grade School, but those who are to leave school at 14 proceed to the Supplementary Courses.

SUPPLEMENTARY COURSES.

In these courses which are provided in thirty-two of the Primary Schools the curriculum is in the main a continuation and development of the subjects previously studied, but fresh interest is gained by directing attention to their bearing on the probable requirements of the pupil's after-school life.

The Commercial Course.

Pupils who are likely to engage in commercial pursuits enter the *Commercial Course* in which endeavour is made to give them such familiarity with principles of arithmetic as will enable them to deal with concrete cases such as occur in actual business transactions. The more ordinary methods of book-keeping are explained and illustrated by keeping accounts in simple form; the purpose and proper form of common commercial documents, such as invoices, receipts, cheques, etc., are explained; and systematic exercise is given in handwriting with a view of securing speed while preserving legibility and correctness of form.

The Industrial Course.

In the *Industrial Course*, other puplis receive instruction in elementary Geometry and Mensuration by construction and measurement of figures drawn to scale by use of compasses, protractors, and set squares. The use of "graphs" to

indicate the relation of varying quantities is taught, and the methods of measuring solids are indicated; practice is given in Arithmetic, and the pupil is made familiar with the use of the ordinary foot-rule and decimally divided scales. Pupils also attend the school workshop, where they are taught the proper use of tools and are exercised in the production of various objects from working drawings, as well as in the construction of such drawings from actual objects. Those sufficiently advanced are also instructed in the simple principles of Mechanics and in such problems as are contained in elementary text-books on Building Construction or Machine Construction and Drawing.

The Household Management Course.

Girls have a *Household Management Course* giving a preparatory knowledge of the essential branches of housewifery. It comprises a series of carefully co-ordinated lessons in Cookery, Laundry Work, and Needlework, including mending, darning and cutting out, Dressmaking, and the use of the sewing machine. In a number of the schools the girls also obtain practice in the actual management of a house, with consequent marketing and keeping of household accounts. In these lessons every care is taken that the pupils clearly understand and appreciate the "reason why" of the practical methods taught.

General Studies.

These Courses aim not merely at the preparation of pupils for any particular occupation, but the production of useful citizens, alive to their responsibilities, and with capacity to enjoy rationally their leisure time as well as to earn their living. Hence certain subjects are in all cases combined with instruction special to the particular Courses. This more general instruction includes English, in which the main object is to create a taste for good literature; home reading in conjunction with systematic lessons in composition; proper care of the body, thrift, conditions of trade and employment, institutions of Government, and history and geography of the Empire.

In the Supplementary Course each pupil is required to keep a record of the work done, for submission to H.M. Inspector, and this record forms the basis of the entries on the Merit Certificate which marks the conclusion of Primary School Education, and is the passport to the Division II. Classes in the Evening Schools.

Central Schools.

Owing to varying numbers in attendance at Schools, it is not always practicable to carry on the three Courses above indicated, and in some cases it is necessary either to omit one other of them or to form combined Courses. In view of the fact that this cannot be regarded as a satisfactory position, the Board in 1909 adopted a resolution that with the view of facilitating the classification of the pupils, of reducing the cost of equipment, and of providing a staff more

suitably trained to give the required instruction, it was desirable that Central Schools should be established in which Supplementary Classes only should be accommodated.

DETAILS OF SOME SUBJECTS.

The following details with regard to the instruction in some of the particular subjects may be of interest:—

Hygiene and Temperance.—As in former years regular instruction is given in these subjects. A "Syllabus of Lessons on Temperance" was recently issued by the Scotch Education Department, and this the Board have agreed should now be used in the Schools. In the classes below the Supplementary Course this instruction is given in conjunction with Nature Study and Physical Training, or as part of the general training of the scholars in good habits. In the Supplementary Courses the work done forms part of the instruction as to the Laws of Health, and is of a more systematic nature.

The Scriptural aspect of Temperance is also dealt with at least once a month in the time set apart for Religious Instruction.

Singing.—The six masters employed specially for this subject devote their time mainly to the classes in the Senior Division and Supplementary Courses of the Schools visited by them. The Singing of the other classes in the Schools is taken by the class teachers under the supervision, in the case of the Junior Division, of the visiting master.

Manual Instruction.—Manual Instruction in the form of Woodwork and Drawing is given to boys in all the Schools. The instruction is conducted in 33 School workshops, 22 of which also serve as Cookery class-rooms. During the past Session 4789 boys received instruction. The work is mainly confined to pupils over 12, but in the course of the year 216 boys received instruction before reaching that age.

Needlework.—This subject forms a part of the curriculum in all the Schools, and except in three Schools, where the instruction is given by the ordinary staff, Sewing is taught by special teachers. Dressmaking is also taught in a large number of Schools. In only one is the work carried on by the Sewing Mistress without an assistant; in 20 Schools the Sewing Mistress had one Sewing assistant; in 7 Schools two, and in eight Schools three assistants. The instruction is, as a rule, highly spoken of by H.M. Inspectors.

Cookery, Laundry Work, and Housewifery.—There are now 13 teachers whose whole time is employed in giving instruction in these subjects throughout the different Schools, provision having been made for girls in these subjects in all schools but three.

School Gardens.—As an adjunct to Nature Study, gardens or flower-plots, which are cultivated by the pupils, have been provided in connection with 11 of the schools, with one or two exceptions these being in some part of the School grounds. Headmasters are unanimous in speaking highly of the educational value of this instruction, which is easily co-ordinated with other subjects, gives reality to the Nature Knowledge lessons, and is a strong factor in curbing tendencies to wanton mischief and destructiveness. Such gardens are a comparatively recent development in Scotland.

SECTION 3: CONTINUATION CLASSES.

These classes are for those who have completed the Supplementary Classes, and for others who have gone to work after leaving the Elementary Schools. Their main objects may be set forth in four divisions :

(1) Bodily well-being through maintenance and improvement of the health of young people. The aim is that those children shall have sound bodies, enjoyable health, and grow up in a wholesome, healthy way.

(2) The enlargement of the sympathetic interest of the pupils and the broadening and refining of their interests and sympathies by the influence of good books and the interest of good literature, and by good reading and instruction in regard to the things they ought to know about.

(3) That the boys and girls should be equipped for the practical work they have to do, and that they shall possess competent knowledge of some craft,

industry or occupation which offers reasonable prospect of livelihood in adult years. When the boy is attending the Continuation Classes he is learning his trade through practical work for wages, and in the evenings or afternoons attending these classes where he receives instruction and training to supplement what he learns in the shop, office or factory.

(4) The inculcation of a sense of civic responsibility. The aim is that the boys and girls over 14 shall recognise their obligation as boys and girls living in Edinburgh, and that they shall think of the responsibilities and duties of communal life as well as of its rights and privileges.

These are the four main things: health, wider interests and sympathies, practical ability in occupation, and good citizenship.

The development of the Continuation Classes in Scotland generally and in Edinburgh particularly has been remarkable during the past few years, the latter being due to the new policy initiated about 8 years ago by the Edinburgh School Board. To-day the standard of attainment is infinitely higher than it was 10 years ago, and the pupils are vitally interested in their work. The change in the standard of attainment and in general tone is due to several causes, one being the introduction of practical experts to teach scientific and technical and trade subjects in the Continuation Classes.

Origin and Progress of Classes.

School Board Public Evening Classes were begun in 1873, when the total number of pupils enrolled in the 11 centres opened in Edinburgh was 983, and average attendance 410. For the first 13 years the number in attendance varied little; in only one year previous to 1906 did the enrolment rise above 4,000. Since 1904 the Edinburgh School Board has devoted very special attention to its system of Continuation Classes. The co-operation of employers, social workers, voluntary agencies, parents and teachers, has been enlisted, with the result that in 1910 the number enrolled was slightly more than 10,000. Since 1905 there has been an increase in the number attending of 6,500, or 186%. The Board's policy has been referred to in the Education Department's Blue Book in the following terms, viz.:—

> An example of what can be achieved by well organised voluntary effort is again furnished this year by the notable further increase in attendance at the Continuation Schools of the Edinburgh School Board.

The following points are interesting, viz.:—

(1) That while the number of pupils in attendance has almost trebled itself since 1904-5, the total cost to the rates has not quite doubled itself.

(2) That whereas in 1904-5 with only 3,600 odd pupils the cost per pupil was 13s. 9d., in 1908-9 with practically double the number of pupils the cost per pupil was only 9s. 9d.

(3) That the increase in numbers has been steady since 1905-6; and that for the last three years the ratio of increase has been practically constant showing in round numbers a yearly average increase of 1,170 pupils.

(4) That in 1904-5 when the numbers were lowest the cost per pupil to the rates was highest.

Scope of Work.

In the years immediately succeeding the passing of the Education Act of 1872 the chief function of the Evening School was to make good the defects of day-school education, and to provide instruction in the elements for those who had never been in attendance at a day school. Within recent years it has been more and more the object of the Continuation School to take up the work of education at the point where the day school leaves it, and to give some knowledge of the underlying principles of the occupations followed by the pupils. Since 1893 there has been a Special Code of Regulations for Continuation Classes. There it is specifically stated that the classes may be held at any time of the day, morning or evening; hence the substitution of the name Continuation Classes for the name Evening Schools. The present code makes provision for

(1) Classes for the completion of general elementary education—Division I.
(2) Classes for the elementary instruction of pupils in special subjects, especially such as may be of use to pupils engaged in or preparing for any particular trade, occupation, or profession —Division II.
(3) Organised courses of systematic instruction arranged with a view to fitting students for the intelligent practice of particular crafts, industries, or occupations—Division III.
(4) Auxiliary Classes for instruction in Physical Exercises, Military Drill, Vocal Music, Wood-carving, Fancy Needlework and Elocution—Division IV.

Requirements of Departments.

By the Education (Scotland) Act of 1908 the scope of Continuation Class work has been considerably widened; its organization being no longer left to voluntary action of School Boards. Section 10 of the Act lays upon School Boards the duty of making suitable provision of Continuation Classes for the further instruction of young persons above the age of 14 years with reference to the crafts and industries practised in the district, and also for their instruction in the English language and literature, in the laws of health and in physical training. The same section confers upon School Boards the power to make, vary, and revoke bylaws for requiring attendance at Continuation Classes of young persons between 14 and 17 years of age.

In a circular explanatory of the provisions of the Act the Scotch Education Department has pointed out that School Boards in industrial districts have no more important or pressing task before them than the fostering by all means in their power of a movement for the better use of the years of adolescence as a preparation for adult life. The question of the exercise of the powers conferred by Section 10 is referred to as follows:—

> Before applying compulsion every effort should be made by the provision of suitable instruction at convenient hours, by conferences with employers and associations of workmen and by co-operation with other agencies to stimulate voluntary attendance. When compulsion is resorted to it might be limited in the first instance to those who have not received the minimum (1½ years) of Supplementary Course instruction before leaving the Day School.

Extent and Character of Classes.

The School Board's Continuation Classes are carried on in 26 schools. These form the connecting link between the Primary Schools and the five Central Institutions. They serve the needs of pupils who have to work during the day

but desire either to extend their general knowledge or to make a beginning of studies bearing on the occupation upon which they have entered.

Much attention has in recent years been given to these classes, and to bringing them into vital contact with the city industries and occupations. The Board works in close co-operation with employers of all kinds and receives from them valuable advice as to forming of courses and actual requirements of the industries. The classes meet on three nights a week, and are held in summer as well as winter. It is found that a well-organized, well-staffed voluntary system attracts large numbers of the city youth of both sexes, and compulsory attendance has not been introduced, although the Act of 1908 gives power to the Board to frame by-laws to that effect. In the winter of 1910-11 the number of students was 10,099; in the summer of 1911, 3,020.

The education in these classes is practically free, the fee for the Session (5s.) being returnable in all the schools (except 3 set apart for Adults over 20 years of age) at the close of the session to each pupil who makes 80% of possible attendances.

The range and variety of instruction may be gathered from the following list.

COURSES AND SUBJECTS.

Division I.—Classes for the completion of General Elementary Education.

English and Arithmetic, and one or more of the following—The Empire, Civics, The Laws of Health, Drawing, Woodwork, Common Commercial Documents, Needlework, Cookery, Laundry Work, Dressmaking, Millinery.

Divisions II. and III.—Specialized Classes and Courses.

ENGLISH COURSE:—
English, Composition, English Language and Literature.

COMMERCIAL COURSES:—
(i) Shorthand Course:—
English, Shorthand, Typewriting.
(ii) General Commercial Course:—
Two or more of the following—Commercial Arithmetic, Business Procedure, Elementary Book-keeping, Shorthand, English, Commercial Geography, French, German, Esperanto.
(iii) Combined Commercial Courses:—
Business (Operative), Business (Historical, Geographical and Economic).

TECHNICAL COURSES:—
(i) Elementary Engineering.
(ii) Elementary Physics.
(iii) Constructional Engineering.
(iv) Elementary Building Construction.
(v) Plumbers' Work.
(vi) Carpentry and Joinery.
(vii) Cabinetmaking.
(viii) Upholstery.
(ix) French Polishing.
(x) Printing.
(xi) Baking and Confectionery.
(xii) Tailors' Work.
(xiii) Plaster Work.
(xiv) Brassfinishers' Work.

ART COURSES:—
(i) General Art Course.
(ii) Wood Carving and Design.
(iii) Modelling in Brass and Copper.
(iv) Modelling in Leather.

DOMESTIC COURSES:—
Two or more of the following—Cookery, Needlework, Dressmaking, Laundry Work, Housewifery, Millinery, and First Aid, Home Nursing, Hygiene and Temperance.

Division IV.—Auxiliary Classes.

(i) Physical Exercises.
(ii) Swimming and Life Saving.
(iii) Vocal Music.
(iv) Wood Carving.
(v) Elocution.

The co-ordination of the work of these classes to the higher work in the five Central Institutions is ensured by frequent conferences of the teachers and administrative officers concerned, and by the issue of a joint prospectus giving all the details and the relationships of the various courses.

Elementary Trade Instruction.

Special attention is directed to the efforts of the Board to provide proper facilities for elementary trade instruction. In connection with the new Supplementary School at Tynecastle a range of 18 workshops has been erected in a two-storied building 406 feet long and 28 feet wide, with an adjoining wing on the west side 100 feet long. The height of the building is 33 feet, and the average floor space of each room 1,000 square feet

The cost of erecting these buildings has been £6,000, which works out at the exceedingly low average of 3¼d. per cubic foot; while the tools and fittings, with necessary electric motors, have entailed an expenditure of £2,020, making a total cost of £8,020.

The 18 rooms have been allocated as follows:—Engineers' and Brass-finishers' work, Tinsmiths' work, Moulders' work, Pattern-making, Cabinet-making, Carpentery and Joinery, Plumbers' work, Upholstery, Plaster work, Practical Science, Mechanical Drawing—one each; Cookery, 3, Laundry work, 2, Tailors' work, 2.

The school was opened in September, 1911, with 23 teachers, all highly skilled experts at their respective trades, and 391 pupils, embracing the following trades:—Engineers 116 pupils; Brassfinishers 20, Moulders 21, Tinsmiths 35, Cabinetmakers 21, Joiners 44, Plumbers 40, Plasterers 21, Upholsterers 11, Polishers 8, Tailors 22, Tailoresses, 32.

The winter attendance was very satisfactory, and the workshops were opened for a summer session of 11 weeks, the enrolment being 216.

It is the intention of the Board to erect suitable workshops in other parts of the city.

Numbers of Classes and Teachers.

The total number of classes in the Continuation Schools is as follows:—Div. I, 35; Literary English, 11; Commercial, 306; Technical, 74; Art, 20; Domestic, 288; Recreative, 87; total, 821.

There are 421 teachers employed in the Continuation Classes, 122 being trained certificated teachers. For the remaining 299 the Board arranged a course of 6 lectures on the art of teaching, illustrated by 4 practical demonstration lessons by their Master of Method. The attendance averaged 200.

Percentage of Attendance.

A very high percentage of attendance has always been a prominent feature in connection with the Continuation Classes, due to the regulations as to return of fee, to attendance and Burton prizes, to the close touch kept with parents and employers by head-teachers, to the interest pupils take in the work, and to the stimulating and practical nature of the teaching. The percentage of attendance for the ten years 1901-1910 has been (in round figures): 95, 95, 94, 94, 95, 95, 94, 93, 92, 90.

Co-ordination with Central Institutions.

There is a scheme of co-ordination between the Continuation Schools and the Heriot-Watt and Art Colleges. The general principle of the scheme is that the elementary instruction in English, Commercial, Technical and Art subjects should be given in the Continuation Schools, and that students who have successfully completed a two or three years' course, as the case may be, should be granted certificates based upon the results of class work and class examinations, as well as on attendance, qualifying them for admission to the Advanced or Specialized Classes in the corresponding department of the "Centrals." The standard of these certificates is maintained under the supervision of three Assessors appointed by the above Colleges and the School Board. So far as technical work is concerned, co-ordination is becoming a distinct success, but in art and commercial subjects results have not been quite so satisfactory.

Methods of Advertising Classes.

The prospectus of the classes is issued in a joint form showing the relations between the Board's classes and the specialised classes of the Colleges, and a copy is sent to pupils who have left day school during the previous session. The arrangements for the session are also widely advertised by posters, handbills, window-bills and newspaper notices. Employers of labour are visited by the Organiser, meetings of workpeople are addressed by Members of the Board, and assistance is asked from clergymen, secretaries of trade societies and headmasters of day schools, in arousing interest in the classes and directing young people to take advantage of them.

Among the questions which now claim the attention of the Board are the following:—

(1) The best means of reaching the 7000 young persons in the city at present receiving no instruction.

(2) The provision of more suitable class-room and workshop accommodation for adolescents.

(3) The prevention of overlapping and waste by judicious schemes of co-ordination with the Central Institutions.

(4) Increased attention to the teaching of Citizenship and Physical Exercises.

(5) The training of practical experts in the art of teaching.

(6) Further co-operation with employers with a view to the institution of Day Continuation Classes.

SECTION 4: CENTRAL INSTITUTIONS.

The Central Institutions recognized by the Scotch Education Department and situated in the city of Edinburgh are:—(1) The Heriot-Watt College, (2) Edinburgh and East of Scotland College of Agriculture, (3) Edinburgh College of Art, (4) Edinburgh School of Cookery and Domestic Economy, (5) Royal (Dick) Veterinary College.

A scheme of co-ordination has existed since 1903-04 between the Continuation Classes and Secondary Schools, leading up to the Heriot-Watt and Art Colleges. It is hoped to have a scheme of Cookery and Domestic Economy brought in. By this co-operative plan the School Board secures expert advice of highly trained specialists employed in those Central Institutions, who visit the Continuation Classes not as inspectors but as advisers, to indicate such lines of work as will best connect with the more advanced college work. In the equipment of the workshops at Tynecastle the School Board had the benefit of the advice of the heads of those institutions, and by so arranging the work that it would not trench on the ground of the Heriot-Watt College, the public were satisfied that economy was kept carefully in mind.

The Continuation Classes provide only two sessions' instruction in English, Technical, Art or Commercial subjects, and pupils who receive certificates of qualification from their schools are thereafter expected to go forward to the more advanced stages of instruction in the Colleges. The assessors representing the "Centrals" and the Board have power to visit the schools from time to time and see papers set by teachers and samples of papers worked by pupils, and where qualified pupils have been readmitted to enquire into the reasons.

The Heriot-Watt College accepts School Board certificates in English and Carpentry and Joinery to admit to Intermediate Classes; those in Bookkeeping and business procedure to admit to specialized classes; and in Mechanical and Electrical Engineering, Building Construction, Printing and Plumbing as admitting to classes in those departments of the College which accept School Board certificates in Commercial Arithmethic and Commercial Geography as equivalent to their own in these subjects. It is arranged that Shorthand, Typewriting and elementary Geometrical Drawing be not taught in the Heriot-Watt College and that the School Board continue to make special arrangements for teaching these subjects.

The College of Art accepts School Art Course certificates to admit holders to their Art Classes, and Board certificates in Cabinet-making to admit to advanced classes in this subject.

A joint syllabus is issued showing the courses of instruction in the various subjects and the relation between the Board's Continuation Classes and the advanced classes in Heriot-Watt College.

To encourage pupils to pass on from the Board's Continuation Schools to those Central Institutions, a private fund is distributed covering College fees, preference being given to pupils who hold certificates of proficiency from Continuation Schools. The Edinburgh Committee on Secondary Education has a scheme for enabling city students who have successfully completed a two or three years' course of study at Continuation Schools to obtain, by bursaries or otherwise, according to circumstances, education at any recognized Central Institution.

Evening classes are held in the Heriot-Watt College, the College of Art, and the College of Agriculture. In the latter the classes appeal especially to those engaged in rural industries in the neighborhood of Edingburgh, in Factor's offices in the city or vicinity, in the seed trade, in nurseries, in gardens or forests or other branches of estate work, in dairying and in the meat and cattle trades. The classes in Botany and Zoology are of special interest to teachers, as they cover most of the ground of the ordinary Nature Study courses. A summer class in Nature Study beginning in April takes up the life history of typical flowering plants, influence of environment, etc., and typical vertebrates and invertebrates. In all the classes the work is made as practical as possible by means of laboratory work, demonstrations, examination of specimens, field work and visits to farms, woods, gardens and other places of interest.

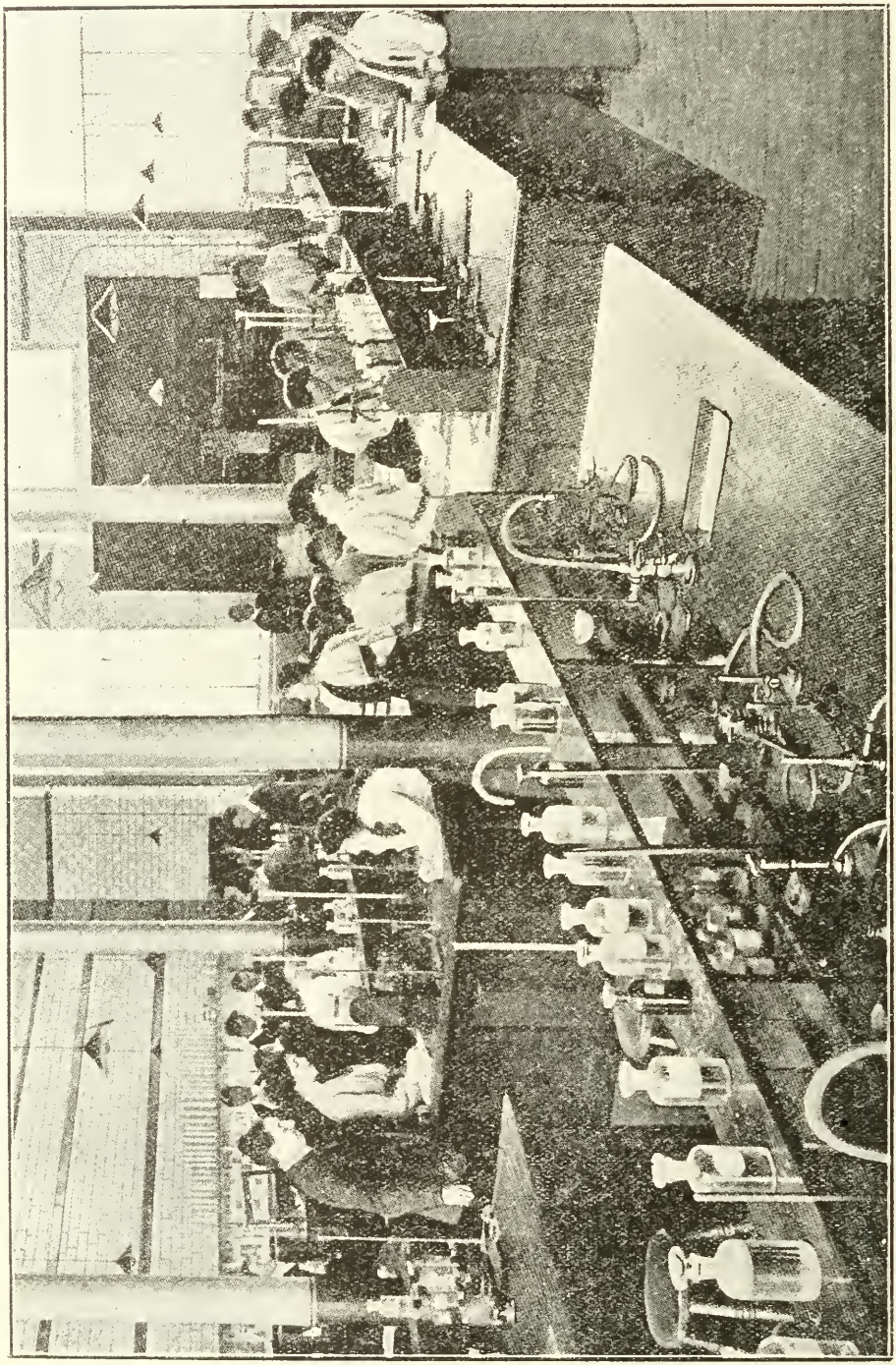
The scope of the several Central Institutions in Edinburgh recognized as such by the Scotch Education Department is as follows:—

(1) The Heriot-Watt College.

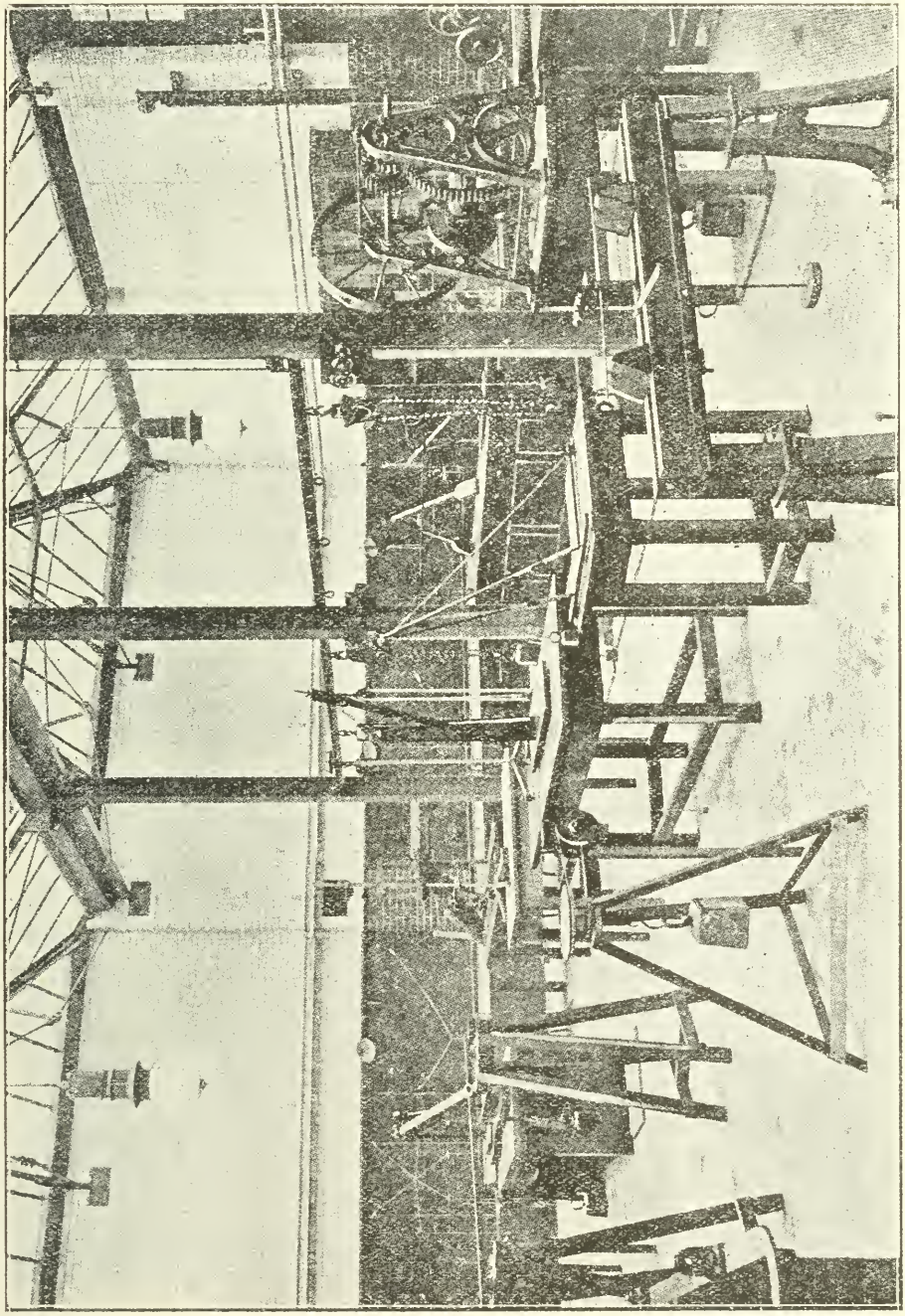
This institution was founded in 1821, under the name of The School of Arts, its general object being the provision of classes to enable industrious tradesmen to become acquainted with such of the principles of Mechanics, Chemistry and such other branches of Science as were of practical application in their several trades. The two leading classes then established, which still continue to take the fundamental subjects of education in the College, were in Chemistry and Natural Philosophy. The name of the school was later changed to the Watt Institution and School of Arts, and finally, when the Governors of George Heriot's Trust took over the management in 1885, to the Heriot-Watt College. (George Heriot was jeweller and goldsmith to James VI, whom he accompanied when the Court was transferred to London in 1603.)

The curriculum has been greatly extended, and is now of much more general character than originally. The Day Classes, which preserve to a great extent the characteristics of the fundamental courses, aim chiefly at providing advanced technical instruction in the applied sciences of Engineering, Chemistry and Mining over at least a three years course; whilst Evening Classes include instruction in such subjects and also provide courses in those of a commercial or literary character.

The courses of instruction are co-ordinated above to the Engineering Department of the University and below to the Continuation Class System of the School Board.



HERIOT-WATT COLLEGE: PHYSICS LABORATORY.



HERIOT-WATT COLLEGE: APPLIED MECHANICS LABORATORY.

The students number annually about 4,000.

The Continuation Classes conducted in this College are as follows:—

For those engaged in Engineering and Metal Trades:
A. Elementary Engineering.
B. Elementary Physics.
C. Constructional Engineering.
For those engaged in the Building Trades:
D. Elementary Building Construction.
E. Plumbers' Work.
For those engaged in Wood-working and Furniture Trades:
F. Carpentering and Joinery.
G. Cabinet making.
H. Upholstery.
I. French Polishing.
For those engaged in Book-binding and Printing Trades:
J. Printing.
K. Bakery and Confectionery.
L. Tailors' work.
M. Plaster work.
N. Brassfinishers' work.

MECHANICAL ENGINEERING COURSE.

(*School Board Continuation Classes.*)

I Year, II Year.—Geometrical Drawing, Practical Mathematics and Machine Drawing.

(*Heriot-Watt College Classes.*)

III Year.—Machine Drawing, 4 hrs. weekly. Practical Mathematics for artisans, 1 hr. weekly.
IV Year.—Electrical Engineering (Elem. 1 hr. weekly) and 1½ hrs. Laboratory work weekly (2nd half of Sess.)
V Year.—Prime Movers (Elem.) 1 hr. lecture, 1 hr. laboratory. Applied Mechanics (Elem.) 1 hr. lecture, 1 hr. laboratory weekly.

Similar Courses are arranged in all regular subjects. 1st and 2nd years are given in Continuation Centres of the Edinburgh School Board; 3rd 4th and 5th years are given in Heriot-Watt College.

(2) Edinburgh and East of Scotland College of Agriculture.

This College was established in 1901. It is under the Scottish Education Department and entirely independent of the City, the Board of Governors representing County Councils. The building is provided with fully equipped laboratories and class rooms. In the day course a three years' study in the science and practice of agriculture is given; Horticulture and Forestry are also included. To meet the requirements of country districts, courses of lectures and experimental work are given at various stations in all the counties throughout the allotted area of influence of the College.

The College does not own a farm, but has 10 acres outside Edinburgh for experimental work. An organizer carries on experimental and advisory work, and at the same time organizes all other branches of agricultural activities in the districts. Most of the experiments are of the demonstration type on plots of from a quarter-acre to one acre. Farmers give up pieces of land for the purpose.

There are 28 Extension Lecturers who give their whole time attending markets and visiting the farmers regularly, but not teaching in Continuation Classes. The plan has worked out towards improvement. Farmers are evi-

dencing their interest in the work, large farmers being extremely friendly. Farmers' Clubs give valuable suggestions, and Advisory Committees of practical agriculturalists meet and guide the College organizers as to experiments that can be taken up, bits of work that may be specially investigated, etc.

Under the direct supervision of the staff 128 School Gardens in connection with ordinary schools throughout the area of the College are conducted under regulations laid down by the College and adopted by the Scotch Education Department, which gives special grants to School Boards for these gardens. The College has regular farmers at these places, and there is a constant point of contact. There are no Evening Classes in connection with School Garden work, but Continuation Classes in scientific work are proposed, and, if established, will be correlated with School Gardens.

Two classes (in Perth and Fife) are held throughout the whole summer for teachers actually engaged in schools, and teachers-in-training also attend College twice a week for 2½ hours each time.

The Scottish Agricultural Society works with the College, which advocates the co-operative sale of produce whenever possible.

There are about 475 students. Some qualify for the University diploma, and some for the B.S.A. degree. Fifty-two per cent of graduates go back to the land; the others are mostly teaching, lecturing, etc. In 1910 there were 114 Day and 287 Evening Students. In Edinburgh a good many legal offices connected with land—factorial work—send young fellows wanting insight into forestry, etc. Farmers near the town come in for veterinary work. Horticulture last year had 83 students, chiefly young gardeners engaged in the Royal Botanic Gardens in Edinburgh and at nurseries and private gardens round about. The work of the College is closely correlated to the Department of Agriculture in the University.

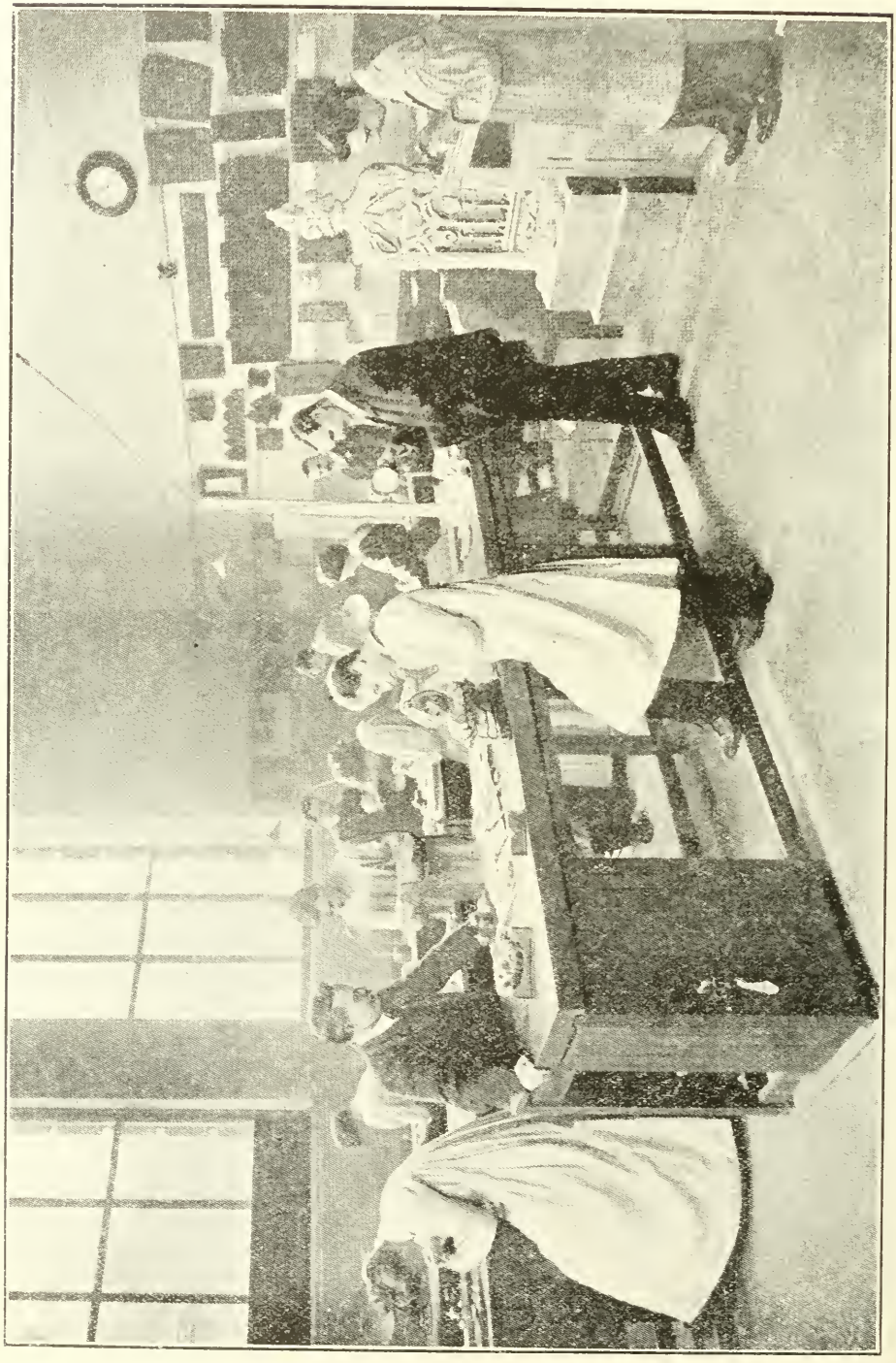
(3) Edinburgh College of Art.

This College has recently been established by the amalgamation of several independent institutions which for many years carried on art instruction in the city. It is under the administration of the Town Council of Edinburgh, and a valuable relationship exists between it and the various Scottish Art Societies and Institutions. New buildings in Lauriston Place were opened in January, 1909, admirably suited for the work. A well organized system of departments in the various branches of Pure and Applied Art has been instituted.

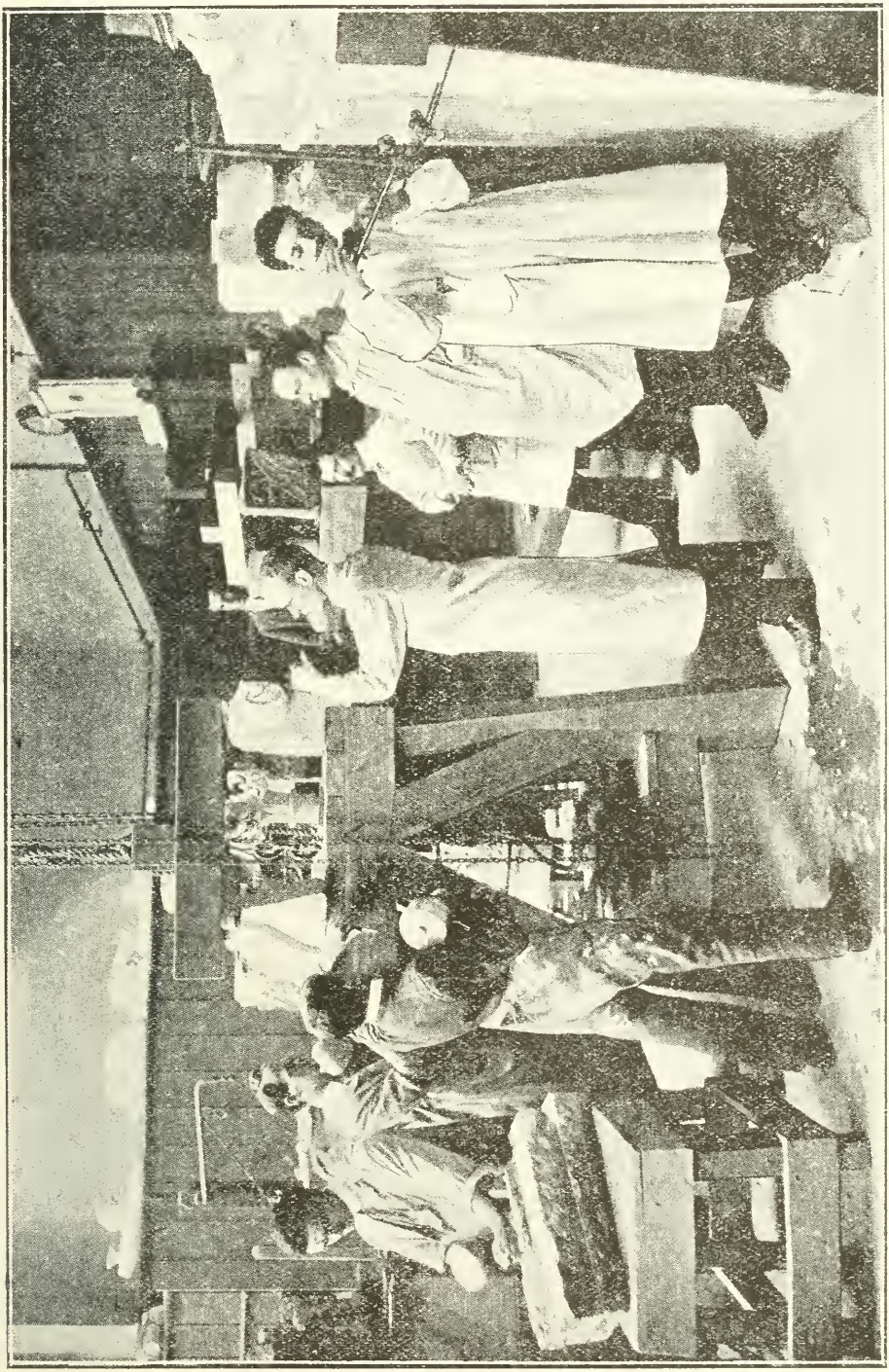
The number of students (day and evening) is about 830.

About 150 lads in the painting and decorating trade attend 4 or 5 nights weekly in the dull season, and about 25 of these were selected for a special course in Drawing and Design. Employers pay their fees from November to March, and during that time they have instruction two days a week, for which time they are paid by employers. The Evening Class is entirely under the control of the employers and the Trades Union.

For trade work, both masters and men are represented on the Committee but do not control.



Woodcarving Class in College of Art.



Stonecarving Class in College of Art.

All architects' apprentices take two hours every morning in Designs a applied architecturally, and quite a number take all-day instruction, special students being selected for further instruction in Evening Classes.

Courses cover Industrial Art, Design, Artistic Crafts, as well as Fine Art. Special classes are held for teachers.

(4) Edinburgh School of Cookery and Domestic Economy.

This institution provides instruction and issues certificates in Cookery (Plain and Upper-Class), Laundry work, Needlework, Dressmaking, Millinery, and other subjects allied to domestic economy. It also gives the necessary training for managers and for those who are to become teachers of these subjects, its certificates being recognized by the Scotch Education Department and the Board of Education in England.

A course has been specially organized for girls wishing to train for domestic service. They must be over 14, and must have gone through a preliminary training in the Supplementary Course. The instruction consists of six month's continuous training at this School and includes practical instruction in Cookery, Laundry-work, Housework, Sewing, Mending, etc. The fee, £11, covers the cost of material for a working dress to be made in the class, also provision of two meals a day in the school. The School keeps a register of students earning the Certificate from this course, and endeavors to find them suitable situations.

A Special "Housewife's Diploma" Course is offered, covering from 6 months to 2 years, according to subjects, the fee being £20, also a one year's course for Lady Housekeepers, fee £17. There is a course for Laundry Managers, 50 lessons, fee £6. 6s.

The co-ordination of the work of this school to that of the Continuation Classes of the Edinburgh School Board is under consideration.

The number of students attending the various courses and demonstrations in this institution averages about 3,000 annually.

(5) The Royal (Dick) Veterinary College.

This College was founded by the late Professor Dick in 1823. Previous to that no institution devoted to the teaching of Veterinary Science existed in Scotland, nor was any Veterinary Degree obtainable in the country.

In 1827 the Highland and Agricultural Society, in co-operation with whom Professor Dick had acted in founding the College, appointed a Board of Examiners, who issued to successful students certificates of qualification to practise the Veterinary Art. Professor Dick on his death in 1866 endowed the Royal Veterinary College, hence it bears his name.

Up to 1906 the College was carried on by the Town Council of Edinburgh, as Professor Dick's Trustees, with the funds left by him, supplemented by students' fees and the income from the College practice, but it is now administered by a representative body of management.

The number of students is now about 100.

(6) Training Colleges for Teachers.

There are three of these institutions in the city, accommodating about 950 students in all, and serving the South and East of Scotland. They provide the general and professional education prescribed by the Education Department as necessary for the training of Primary and Secondary teachers. The course extends generally over two years, but allowance is made for time spent at the University or elsewhere in approved courses of general training of academic rank.

The work of the Colleges is closely related on the one hand to the preliminary instruction given in Secondary Schools and Junior Student Centres, and on the other to the curriculum of the Arts and Science faculties of the University.

The Colleges, formerly under the management of the Church of Scotland and the Free Church, are now united into one under the control of a public body known as the Provincial Committee for the Training of Teachers. A second still remains under the management of the Scottish Episcopal Church, and the third, the St. George's Training College for Secondary Teachers, is under the management of a Committee chosen from the subscribers to the College.

(7) Edinburgh University.

Although the youngest of the four Universities of Scotland, the University of Edinburgh annually enrols the largest number of students, and has, in some respects, acquired a fame greater than any of the others.

Founded in 1581 on the historic site of "Kirk o' Field," the scene of Darnley's murder, it was opened for teaching in 1583 under the name of King James's College. Its origin is due to a bequest left to the Town Council by Bishop Reid of Orkney. In 1789 the original buildings had fallen into a state of disrepair, and the erection of the present stately buildings in South Bridge was commenced. The work was completed in 1828.

In 1869, owing to the great increase of students, it became necessary to provide more accommodation, and the University new buildings were subsequently erected. These buildings have been completed by the addition of the M'Ewan Hall, a gift to the city and University, which cost £115,000. Within recent years additional buildings have been provided by the establishment of the John Usher Institute of Public Health and by the erection of a new block at High School Yards for the Engineering Department.

There are six degree conferring faculties in the University constituted by recent ordinance,—Arts, Science, Divinity, Law, Medicine, and Music.

The number of matriculated students during the session 1908-9 was 3,286, distributed as follows: Arts, 1,157; Science, 300; Divinity, 64; Law, 305; Medicine, 1,440; Music, 20.

Women are admitted to degree examinations on the same conditions as men.

SECTION 5: CONVERSATION WITH MR. J. W. PECK.

Information obtained from "Conversation" with Mr. J. W. Peck, *Secretary to the School Board, Edinburgh.*

Every year about 4,000 children, half boys and half girls, flow out from the schools, about 3,000 at one time and 1,000 at the other, and the Employment Bureau deals with them. When the date for leaving school approaches, the head-master fills out on a card the boy's educational qualifications, physique, adaptation, and what trade he would be suitable for. The parents also put on the card what they would like him to go into. The boys and girls are notified to go to the head office and get verbal advice on those things. Their going is optional, but tea parties are given at the schools, with all the parents present, and they are pressed very strongly to send the children along immediately they leave school and follow up the registation or personal interview with the authorities. The larger porportion of the 4,000 and their parents go, a certain number of nights weekly being set aside for these interviews.

Mr. McNally, the organizer of the Continuation Classes, deals with those matters. He advises the scholars and their parents as to what they are best suited for, and also what Continuation Classes they should follow if they are going in for a profession.

There is also an office in the Labor Exchange under the British Government system, and for the juvenile work the Exchange Officer sits in the room next to Mr. McNally. After the boy has fixed upon what he is best suited for, he passes on and definitely registers there for that occupation, and the Government officers keep all his record cards. The age is 14 plus a fraction, there being two fixed dates for leaving school.

The "forked road" in the selection of an occupation between professional and industrial life occurs in the school course about 12. The Labour Exchange Officer,who is in contact with all the employers of the city, looks up his cards and writes for the boy to come along. The boy may or may not get the job. It is a recent system, but it is working fairly well. Mr. McNally gives advice on (1) what the boy is suited for, (2) the industries of the city, and (3) the educational qualifications to keep up with them.

Continuation Class System.

The Continuation Class is a two-year system, from 12 or 13 onwards, for the more elementary side of industrial work. The more advanced side is given during the following three years at the Heriot-Watt College for engineering and mathematical work: at the College of Arts for art work; at the College of Domestic Science for cookery work; and at the College of Agriculture and the Veterinary College. There is no College of Music, thus leaving a gap in the system. There are three years of training sub-divided in these more highly specialized Colleges.

Edinburgh suffers somewhat from the variety of managing bodies. The School Board manages the Continuation Class system; then the several Colleges are under the management of Governors. The Colleges wiped out their elementary Continuation Classes some time ago. When boys get to the top of the Public School system they pass on to the various Colleges, and the system is practically all one, as though one authority were managing it. The Colleges were quite glad to be relieved of their elementary work. The professors go around and see that the elementary teachers are working on lines co-ordinating with their own.

The Continuation System aims to cover education on four points:—(1) English: general development of power in speech and writing; (2) Citizenship, duties, privileges and responsibilities—they are all linked together in the organism; (3) Physical Exercise; (4) Actual Technical Training in various subjects, which follow pretty well the sub-division of the Colleges. The schools give, on a lower scale, what the colleges are giving on a higher, under a scheme of co-ordination whereby all the colleges relate their syllabuses to those of the Elementary Schools.

A Census Survey.

Last summer a survey was made of all the industries; and houses of less than £30 rent were visited to ascertain what industry or occupation the young people therein between 14 and 18 were following. In this way a complete census was obtained of the juveniles and industries of the city. Where the census showed that a certain industry was asking for workers, and was not provided for in the educational scheme, a class was started. It is hoped to have a scheme of classes that will fit the conditions disclosed by that industrial census.

How Teachers are Secured.

The question of teachers is a very difficult point. Some are Day School teachers of ordinary subjects, such as Geography and History. Actual workers in the industries are employed as teachers of the technical work, as they know the practice of the shop and are familiar with all the processes; but they have the disadvantage of not being trained as teachers. Last year an effort was made to overcome this by a course of six weeks on methods of teaching, class discipline, how to interest pupils, etc., together with practical demonstrations by really good teachers, such as Professor Stanford, of the Heriot-Watt College, who gave a lesson on how to teach Engineering, all the Board teachers who were teaching Engineering being present.

Mr. Peck's opinion was that the advantages from the teachers being practical men compensated for their lack of training in teaching. He would rather take a practical worker and give him training in teaching than take a trained teacher and try to indoctrinate him in the Technology of Engineering. The workshop teachers had had experience as pupils in Evening Classes and would remember how they were taught. Professor Stanford goes round the Continuation Classes to see about the teaching.

The practical workers who teach in the Evening Classes are paid about 3s. 4d. (80 cts) an hour. At the head of each group of Evening Classes there is a Head Teacher, who is generally a man of experience in the Day School and is responsible for seeing that proper teaching methods are followed, details of registration properly carried out, etc. There are about 300 of these workshop teachers. It is proposed to give three lectures on general methods of teaching to the whole of them by the Master of Method from the Training College, then to follow that with three or four lectures to the various groups by recognised experts in those groups—lectures to Engineering men on the special way in which Engineering should be taught, etc. Then that would be followed up by sending those experts or subordinate experts to observe them in their classes and see if they were following out the methods they had been given in these two different kinds of lectures. It is hoped thus to rivet the whole thing together by concluding with lectures by the Master of Method.

Students and Employers.

The Continuation Classes are attended by about 10,000 pupils in winter and 3,000 in summer. In addition to the office work by the organizer of Continuation Classes and the officer of the Labor Exchange, series of meetings of employers are arranged. The employer gets all his work-people together, and the Education Office sends speakers to urge on them the advisibility of entering the classes, the employers in some cases guaranteeing the fees. In that way a large number are brought in. Some eight years ago only about 3,000 were in these Classes, but by advertising, by employers' meetings, by getting at the parents, and by proving the caliber of the work, the number has been increased to 10,000, which is only about half the possible number. Mr. Peck did not know that they would get much higher than that figure, because of the inertia which could not be moved by even the most vigorous methods.

Re Compulsory Attendance.

Optional powers are given to Local Authorities under the Act of 1908 to pass by-laws requiring all young persons up to the age of 17 to attend Continuation Classes. Age limit, not educational attainment, is the basis of the legislation, just as in the Elementary School. One little Board in Haddingtonshire in 1909 passed a by-law under the Act, but it has not been followed up to any extent yet. Mr. Peck thought that compulsion up to the age of 14 does not give the authorities sufficient power or opportunity; and that specialization for industry before 14 is for such a very limited period that it must be of a very elementary kind. It was not real specialization at 14, but was just to interest the pupils in the application of their Arithmetic and Drawing to industries and arts, and did not carry out the work in the detailed way of the higher courses. He did not think the system which stopped at 14 could give a Technical Training such as the community required.

Six Hours of Day-Light Teaching Suggested.

He pointed out of the Act does not say that the classes must be Evening Classes but simply says "further education," leaving the Local Authorities free to specify Day Classes in their bylaw. If employers could be persuaded to let their employees off for Day Classes he thought it would be the better way. The Day Continuation Class work, he added, would have to be a part-time system. It would be a very serious revolution to take a large lump of day time out of industry. An improvement, if they could get the employers up to it, would be to take six hours weekly in daylight for Continuation Classes, instead of two hours on three nights weekly as now. Most of the members of the School Board, however, were timid about making this move. The initiation of the by-law is left to the School Board, which is subject to the will of the general ratepayers, who to some extent would be employers. The situation would be quite different if compulsory attendance were a statutory requirement. Where the School Board is elected it is more difficult to pass such a by-law. Of course if any large number of the ratepayers wanted it they would press for it at the triennial elections.

Advisory Committees and their Functions.

Advisory Committees, 18 in all, are made up for the groups of industries from employers, expert workmen and others interested in the industry. Their object is to see that the classes are kept in contact with industrial practice, and that the teachers are doing the work properly. They also advise the authorities as to whether they are guiding the pupils properly to the various industries; whether the various pamphlets issued by the Board about the industries are properly drawn up; and generally, they keep the Board right in regard to those matters. The members of those Advisory Committees attend meetings very regularly. The reports almost invariably say, "every member present." Each Committee has from 5 to 8 members. The Advisory Committees meet all together once a year and discuss things generally, and their suggestions are found very valuable and practicable. Those Committees are consulted about the workshops. For example, if the Board wanted to teach Tailoring, they could advise as to what sort of work should be taken up, what sort of men should be obtained as teachers, etc. He did not say the Board always accepted fully what the Committees suggested, because it has to deal with the educational side of the question. Out of the entire Advisory Council of 125 members, which is made up of the members of all the Advisory Committees, only 10 or 12 are educational experts.

CHAPTER XV: ORGANIZATION OF EDUCATION IN GLASGOW.

Introductory.

Glasgow is organized for education on lines so similar to those given in detail for Edinburgh, that merely a summary and a few special features are given.

The School Board has 15 members and a Clerk; 12 Committees look after the various departments; and the Board has representatives on various educational and other bodies in the city, numbering 22 in all, including Central Institutions, Endowments Board, Committee on Secondary Education for the District, etc.

After experience with the new Education (Scotland) Act of 1908, the Board reports that while proceeding cautiously and, where possible, by way of experiment in regard to new questions, it continues to make steady progress in all departments of its work. It is establishing a systematic co-ordination of the various departments of educational work, and attempting to bring about the closest possible connection between the Day Schools and the Continuation Classes.

The experiment of establishing, in one of the Higher Grade Schools, a three years' course of instruction specially suited for the needs of pupils who intend to proceed to engineering or allied trades, and to continue their studies at the Evening Classes of the Technical College or other Central Institution, proved so successful that it has been extended.

The Continuation Classes are being developed with due regard to the needs of all members of the community; and, as fitting in an industrial city like Glasgow, special attention is being paid to the requirements of artisans. Further, in order to insure that every child under their care shall get at least the rudiments of a good elementary education, they have, under section 10 (3) of the Education (Scotland) Act, 1908, made by-laws compelling the attendance at Continuation Classes, until 17 years of age, of young persons beyond the age of 14 years within their district (1) who have not completed two years' attendance at a Supplementary Class or the equivalent thereof, (2) who are not otherwise receiving a suitable education, or (3) who are not especially exempted by the School Board from the operation of the by-laws.

SECTION 1: CONVERSATION WITH MR. J. CLARK.

Information obtained in "Conversation" with Mr. J. Clark, M.A., *Clerk to the School Board of Glasgow, and with* Mr. Fleming.

The School Board has very wide powers under the Act of 1908. There are fixed dates for the children to enter and leave school, these dates being chosen

with the approval of the Central Authority, viz., 1st August, 1st February, or 1st April next after the child's 5th birthday; the leaving date being the corresponding one after the age of 14. From the time of entering to about 7 years of age, the child remains in the Infant Department; then from 7 to 12 there are five main stages. At 12 he passes the Qualifying Examination, and goes to either Secondary School work or to a Supplementary Class. The latter has an important bearing on industrial training. Many artisans are getting their training in the Evening Classes and proceeding to the Technical College or other Central Institution, where they take certificates and diplomas.

Selection of Vocation.

There is no distinction between Elementary and Secondary School work before 12 years of age.

At the age of 12 a notice is sent out to the parents, asking them which course they desire the child to follow. If a child is to leave at 14, since the Board has power to keep him at Evening Classes till 17, it is better for him to take the Supplementary Course and afterwards take his artisan or commercial training in the Evening Schools.

The integral difference between the two courses—the Supplementary Course and the course of the Secondary School—is that in the Supplementary Course no new ground is broken. Generally speaking, half the time is given to manual work; the boys have 5 hours Drawing and Manual Instruction, and the girls have Housekeeping, including Household Arithmetic and Keeping Accounts. They go out in turn to buy the provisions that are to be cooked for the day's work; and in addition, they have Dressmaking and other things.

If a boy had taken the Supplementary Course and then changed his mind, he would really require to go back to the beginning of the Higher Grade Course. Though he might go a little faster, he would be handicapped almost to the extent of the time he had spent in the Supplementary Course, but he would have lost nothing in his powers of observation and reasoning. He would not be so well equipped for the science side. A lad, after two years of Supplementary Class work and two years of Evening Class technical work, would be as well equipped for the particular kind of artisan work he was going to, as if he had had the three years' science course of the Intermediate Classes—in fact, a little more so. As a matter of fact, there are only very few cases of boys changing from one course to the other, chiefly because the schools are very fortunate in having the right men to advise the parents, so that only those who are quite sure of not being able to keep the boy at school after 14 are sent into the Supplementary Classes.

Attitude of Employers.

Out of about 7,000 going out yearly, probably 2,000 pupils have not reached the Supplementary stage, but there is a by-law under the Education Act that they shall make it up before 16. The difficulty is that where the boys are working in factories and shops, the number of hours, including education,

must not exceed the limit stated in the Factory Act. Some employers are rather inclined to say that if there is any restriction as to the hours of labor, they will take nobody before 17; but others pay their apprentices sixpence a week additional for each certificate they get, so that some of these boys who would ordinarily be getting 10 shillings, are earning 14 shillings per week. One of the main objects of the by-law is to improve the attendance at Day-School, and in time people will realize that those who do not attend are so much handicapped in getting employemnt that the effort will be made to keep them at school till 14. Only those who do not attain a certain standard come under the by-law, and the parents begin to appreciate it already.

Admissions and Bursaries.

All the Science Classes in the whole of the West of Scotland are affiliated with the Technical College, and the students can get into the Technical College without examination on the certificate of the school.

The Burgh and County Committees have schemes of bursaries and maintenance allowances which enable the poorest lad in the district, if he has the necessary ability, to go on with those classes. The various industries are represented—engineering, drawing, building, naval architecture, coal mining, etc., and a scheme is being worked out on more elastic lines on the Commercial Education side at the Central Institution. The bursaries tend to keep the boys at home in the early stages, which is desirable, as the lower stages of the Technical College are overcrowded. By co-ordinating these local courses and accepting their certificates for admission to the Technical College, this is achieved. The particulars of the case of an applicant for a bursary are gone into in each case, and the nominating authority nominates on the basis of the certificates held by the students, while the personal evidence of the student is made an element.

Co-operation with Labor Exchange.

The Technical College co-opts special members to decide along what lines special instruction should be given, and the Local Committees co-opt leading experts in various lines, all working in close conjunction with the Labor Exchange and the Advisory Committee consisting of representatives from all the education authorities, and from leading trades and industries and associations of industries. These can do what the Labor Exchange cannot do, viz., advise parents and boys what trades are overcrowded or unsuitable. Cards in duplicate are sent to the centres, one being filed at the School Board for Continuation Class purposes, the other filed at the Labor Exchange. These cards give information about the boy and some idea of what he is most fitted for. The Headmaster advises the boys when leaving to continue their education, and every case is visited so as to get them into the Continuation Schools. The Labor Exchange is not to relieve parents of their responsibility, but to help them. Special inducements are offered to boys

to take courses rather than single subjects, by making it cheaper to do so. It is also proposed, instead of returning part of the fees for regular attendance, to admit to a second year's course, and to return the money at the end of that.

In Scotland the School Boards have a great deal of power in the matter of attendance, but Glasgow is the only big educational authority in Scotland which enforces the by-law about children in factories attending school, or even children working for their parents, or independently such as newsboys, etc. Every child has to be licensed for public purposes, and licenses are refused to those who do not attend school. While regularly constituted authorities have much power and responsibility, the Scotch system is essentially democratic.

Elementary Education.

The number of pupils for whom grants were paid during the school year 1910 was 69,886. Of these, 1,903 pupils, including 198 junior students, earned grants in the Higher Grade Departments and 67,963 in the Elementary Departments of the schools. The total amount of grant received from the Scotch Education Department, exclusive of the two High Schools, was £99,303, 6s. 11d., being £1. 8s. 3¼d. per pupil, for schools inspected on the work of 12 months, as against £94, 887, 7s. 2d., or £1. 7s. 6½d per pupil, in the previous year. This shows an increase of £4, 415. 19s. 9d. over all, and an increase of 8¾d. per head.

It is noted with satisfaction that enrolment in Supplementary Classes or in Higher Grade Departments was 5,735, as compared with 5,483 the previous year. The percentage of successes of pupils was 96.3, as against 97.7. In these classes and departments, 4,916 pupils received instruction, as compared with 4,406. Grants amounting to £8,185 10s. were paid on an average attendance of 3,146, as against £6,921 on an average of 2,676; and Merit Certificates were awarded to 1,618 pupils out of a total of 1,670 presented, as compared with 1,257 out of 1,279 in the previous year.

Secondary Education.

An increasing number of duly qualified pupils continue to take advantage of the higher education offered in the Secondary Schools of the Board. Care is taken at the date of each qualifying examination that parents are informed of the difference between Supplementary and Secondary Education, and warned as to the inadvisability of enrolling in a High School or a Higher Grade Department any pupil who is not to continue at school until he has obtained at least the Intermediate Certificate.

The three years' instruction, which constitutes the Intermediate Course, includes a systematic study of English and one or more languages, balanced by adequate instruction in Mathematics (including Arithmetic), Science, and Drawing. All specialization is postponed until the stage of the Intermediate Certificate has been reached. Thereafter, the pupils, while following a broad general curriculum, have an opportunity of varying their subjects of study according as they aim at an academic, a scientific, a technical, or a commercial career.

The Intermediate Certificate is accepted as qualifying pupils for admission to Schools of Art, Schools of Domestic Science, and certain other Central Institutions. This standard of attainment is also demanded of pupils entering on the Junior Student Course.

Pupils who have completed a post-intermediate course of three, or in some cases, two years, and have obtained the Leaving Certificate, are fully equipped to profit by University instruction, and a pass on the higher standard in any subject at the Leaving Certificate Examination is accepted as the equivalent of a pass in that subject at the University Preliminary Examination.

Continuation Classes.

In the organisation of the Continuation Classes, the establishment of a close connection between day and evening school work, and the encouragement of a higher standard of general education are sought. The development of Supplementary Classes in the day school makes it possible to secure this. One function of the Continuation Classes is to make it possible for pupils who have completed the Elementary Day School course to broaden and extend their knowledge, and ultimately to specialise along the line of their practical work. Recognising this, the Board are gradually increasing the scope of their classes. In addition to the courses already in existence, English, Language, Commercial, Domestic, and Industrial courses have been arranged and all students who have not previously acquired a satisfactory knowledge of English must include that subject in their course.

Provision has been made under the Industrial Courses for artisans engaged in various trades to receive instruction in the principles underlying their occupations, and in workshop methods and processes, with such practice as may be necessary to supplement their workshop experience.

Attempts are also being made to stop the leakage between Day and Evening School in the case of those who left school before reaching the Supplementary Class. At each of the fixed dates, particulars of all children leaving school are obtained, and Attendance Officers are detailed to visit their homes, and endeavour to secure their enrolment in the Continuation Classes. So far this has not had an appreciable effect, but under the new by-laws the attendance of such children will be compulsory. The co-operation of the Employment Bureau of the Labor Exchange proves helpful in enabling the Board to trace such children as receive employment through the Exchange. Despite the leakage above referred to, there is a considerable increase in the number of pupils taking advantage of the classes for the completion of general elementary education, the total number being 3,588, as compared with 3,017 the previous session. In the more advanced classes for specialised instruction there is also a considerable increase, the numbers being 20,688, as against 18,506,the percentage of attendance being 80, as against 81.

SECTION 2: A CENTRE FOR THE WEST OF SCOTLAND.

Glasgow is the centre for the Western Division comprising the Counties of Argyll, Ayr, Bute, Dumbarton, Dumfries, Kirkcudbright, Lanark, Renfrew, Wigtown. In this Western Division there were in the Session 1909–10, 435 Continuation Class Centres and 827 Continuation Classes.

As the result of a conference between the Glasgow and West of Scotland Technical College and the Glasgow School Board, these two bodies were persuaded to have a common system of organization in which the objective of the Continuation Classes conducted by the School Board should be the Technical College, and which would be beneficial to the pupils to the extent to which they carried it. Of course the co-ordination is a loose one: no rigidity is insisted on; but the Glasgow and Govan School Boards accepted the proposal, and now it has spread over practically the whole of the south-west of Scotland; so that classes in Kilmarnock, Dundurn, Paisley, Greenock, Hamilton, and many other places are all directly linked on to the Technical College, the scheme having been adopted by some 30 Boards in the Western Division and three from Stirlingshire.

ORGANIZATION OF SCIENCE CLASSES.

This has raised the question of representation upon the Joint Committee on the organization of Science Classes, which could not be regarded as satisfactory unless every Educational Authority adopting the general scheme of work was represented on the Committee. The whole matter has now been considered and a readjustment made upon a fair basis. The Committee is now composed of:—

(a) Four representatives of the Technical College.

(b) Three representatives of the School Board of Glasgow.

(c) Three representatives of the Govan Parish School Board.

(d) One representative from each of five School Boards and one representative from the Govan Y. M. C. A.

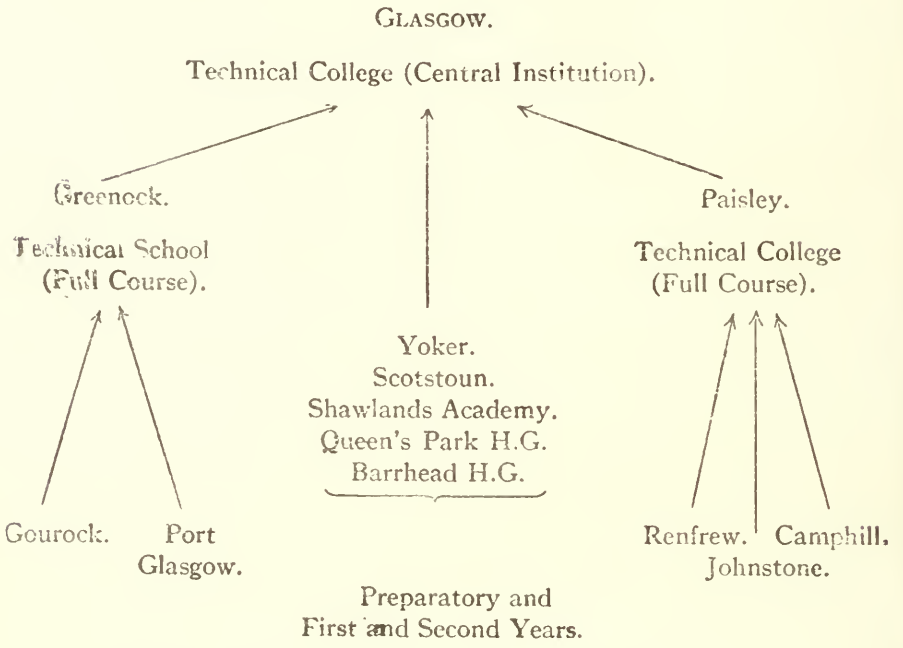
(e) One representative of each authority, excluding those mentioned, having an enrolment before the preceding September of not less than 150 individual students in affiliated classes.

(f) The Organizing Secretary or Director of Education for any county containing affiliated centres, or a representative from the County Secondary Education Committee.

(g) A representative of the Scotch Education Department.

PLAN OF TECHNICAL EDUCATION IN RENFREWSHIRE.

The following conspectus of Technical Courses in Renfrewshire will serve to show the arrangements made in that county.



EMPLOYERS' CO-OPERATION IN CONTINUATION CLASSES.

Public meetings have been held in a number of towns with a view of arousing a greater measure of interest in Continuation Classes and widening public opinion regarding their aims and possibilities. A Workers' Educational Association, representative of various Craftsmen's Societies, has been formed with branches and secretaries in certain districts through Glasgow, with the object of co-operating with the Board by impressing upon apprentices the benefits likely to accrue from attending a course of study having a direct bearing on their craft. Conferences have also taken place in several cases between employers and others interested in education, for the purpose of eliciting opinions on the selection and training of apprentices.

In response to a Circular issued to all employers in Glasgow and District, containing a series of questions, practically every one favoured co-operation, and promised to do all they could; some stipulating that the classes be held in the evenings. The questions dealt with the training of apprentices (*a*) before apprenticeship, (*b*) during apprenticeship.

Under (*a*) the great majority emphasize the importance of general education rather than technical, though specialization in mathematics and kindred subjects is favored by some. Under (*b*) specialization on the lines of the pupil's work

is recommended, adequate instruction being given in Mathematics, Geometry, Drawing and Blue-prints. Some employers also express a desire for practical instruction of apprentices in their particular work.

On the whole, firms would give preference to boys prepared on the lines indicated; some however decline to do so. The bulk of employers would be willing to give every encouragement as regards promotion, etc. to apprentices in their works attending classes approved by them; some have already adopted this course. Others point out that owing to the trade rates of wages it would be difficult to grant increases.

Some employers offer to recoup apprentices' fees and expenses for materials, etc. or to promote good pupils to the drawing office by examination. All express willingness to co-operate with Education Authorities in promoting Trade Classes whose object is to produce more highly skilled workmen. They also promise to lend small equipment, such as patterns, tools, moulding boxes, etc. to classes in the district.

As regards the time for holding classes, about 80% of the firms maintain that work would be dislocated if the classes were held during the day. About 12% think that classes should not be altogether in the evening, while others express doubt, but will consider the matter. One firm suggests that boys should spend half the year at classes and half at the works. Even those firms, who consider that the classes should be in the evening, express readiness to co-operate with Education Authorities in arranging them at other times.

The majority of employers do not consider it advisable to have reports sent them on their apprentices' progress, only 37% answering in the affirmative.

GENERAL SUMMARY OF EMPLOYERS' OPINIONS.

The general opinion is in favour of:—

(1) Boys to stay at Day School till 16;

(2) Failing which, boys to attend Continuation Classes for subjects similar to those of the Day School, to be followed by a more technical course in Mathematics and Machine Drawing on entering their apprenticeship.

BURSARIES.

The Bursaries awarded by the Committee on Secondary Education for the District of the School Board of Glasgow are of three classes, viz:—

(*a*)—*Intermediate Bursaries*, granted to pupils from Elementary Schools or Departments, and tenable at an Intermediate or Secondary School for three years, from the beginning of the session subsequent to that in which the Qualifying Examination has been passed. A Bursar must take the full curriculum of the school for the Intermediate Certificate of the Scotch Education Department.

(*b*)—*Secondary Bursaries*, granted to pupils from Intermediate or Secondary Schools, and tenable at a Secondary School from the beginning of the session subsequent to that in which the Intermediate Certificate has been gained. A Bursar must take the full curriculum of the school for the Leaving Certificate, or for the Junior Student's Certificate.

(*c*)—*Central Institution Bursaries*, tenable at the following Institutions:—The Glasgow School of Art, Glasgow Athenæum (Commercial College), the Glasgow and West of Scotland Technical College, The West of Scotland Agricultural College, Glasgow Veterinary College, The Glasgow and West of Scotland College of Domestic Science.

A Central Institution Bursary is awarded for one session only, but a further application may thereafter be made to the Committee.

General Conditions.

(1) The parents or guardians of applicants for Bursaries must be resident within the area of the School Board of Glasgow.

(2) The Bursaries are not awarded by examination, but the Committee will take into account the educational qualifications of the applicants as well as their need of financial assistance. The amount awarded will vary according to the circumstances of each case.

(3) The Bursaries will be paid only on a satisfactory report as to attendance, progress, and conduct being obtained from the Head Teacher.

(4) The Bursaries shall not be tenable with any other Scholarship or Bursary, unless in very exceptional circumstances, with the special approval of the Committee.

(5) On the award of a Bursary a form must be signed declaring that the Bursar intends to complete the relative curriculum course; in default of such completion, the return of the amount expended will be required.

Under the Glasgow Educational Endowments Boards, Bursary competitions were held in 1911 for University Bursaries. Three Bursaries of the annual value of £25, tenable for four years at the University of Glasgow, were awarded by competitive examination among those who had attended Public or State-aided Schools in Glasgow and required aid in obtaining a University education.

170 Bursaries were also awarded for Continuation Classes, 50 being for scholars whose previous education qualified them for attendance at Continuation Classes at Central Institutions, and the remainder for those already in attendance at such classes.

Candidates above the age of 17 are excluded from these competitions and the Bursaries are awarded strictly in the order of merit.

SECTION 3: CENTRAL INSTITUTIONS.

The Commission was impressed with the general good work done in Glasgow, as in other places in Scotland. In addition to the information obtained from conversations with Messrs. Clark, Fleming, Stockdale, Newbery, and other leaders, we give a brief survey of the Central Institutions.

The Glasgow and West of Scotland Technical College is fully covering the ground in the various branches of Engineering, Mining, Naval Architecture, Chemistry, Metallurgy, Building, Textile Manufacture, Mathematics and Physics. An account of the work of this college follows the "Conversation" with Dr. Stockdale.

One Institution of particular interest is the Glasgow School of Art, which is featured under (4) of this Section.

Under the head of Central Institutions, brief outlines are given of the West of Scotland Agricultural College and the Glasgow Athenæum (Commercial College). These and the above, together with the Glasgow and West of Scotland College of Domestic Science and the Glasgow Veterinary College, form the Central Institutions for the district.

(1) GLASGOW AND WEST OF SCOTLAND TECHNICAL COLLEGE.

Information obtained in "Conversation" with DR. H. F. STOCKDALE, F.R.S.E., *Principal.*

This College was established in 1796, and is therefore probably the oldest Technical College in the world. A class known as the Mechanics' class conducted under that old institution, which had the name of Andersonian College, called after the founder, Professor John Anderson, hived off from the parent institution and took to itself separate premises and management and called itself the "Mechanics' Institution". That was the beginning of these Institutions which under that name spread throughout the whole of Great Britain, and which have formed the beginnings of nine-tenths of the technical institutions of England.

In 1886 a Royal Commission which had to deal with the endowments of Scotland, and had large powers, brought together again the old Mechanics' Institution and the Andersonian College and some three or four or five other endowed bodies, and formed them into the "Glasgow and West of Scotland Technical College". These were brought bit by bit into one homogeneous institution, but the work of the College was conducted in three or four buildings scattered over the city. About ten years ago Glasgow raised a building fund of about £360,000, £80,000 of which came from the Government, the balance from voluntary subscriptions or grants from the city and other authorities. With that money the present magnificent building was erected.

REPRESENTATIVE BOARD OF GOVERNORS.

When the College was started with a new lease of life in 1886, the Commission placed it under a Board of Governors which consisted in the first place of certain Life-Governors representing old endowments which were then thrown into the common pool; and in addition to that they authorized the Lord Provost and Magistrates, the School Board, the University, the Trades House, the Merchants' House, Educational Endowments Boards, and public bodies of that kind, to appoint representatives for terms of years. With very slight modifications that Constitution holds good to-day, and these men are the governing body.

FREEDOM UNDER SCOTCH DEPARTMENT

In the old days the work was largely under the Science and Art Department of the English Board of Education, but about 12 years ago the power to give money for this work was transferred to the Scotch Board, and since then the

College has been in the hands of the Scotch Education Department whose general policy is to allow the utmost freedom in the development of the work. While the Department requires to be very fully informed about finances, proposals in regard to payment of staff, and a hundred and one things that make up the working machinery of the College, they have not interfered, and have had sense enough to see that those on the spot probably understand local problems better than they, and from the start they have done nothing but help those in charge.

Day Students.

Shortly after the transfer of authority, the day work began to push ahead very strongly, until now there are 600 day pupils, more than half giving their whole time to College work, on which they enter with full University standing; but the standing of the diplomas of the College is not less than that of any British University. The other half of the students is variously made up. For example, a big shipbuilding firm has met with difficulty in regard to a particular oil, and they sent a competent man, a graduate in science, and put him in the laboratory to deal with that particular question. Though this man is not typical of the other 300, it is quite a common thing to find a man in a civil engineering office who is weak in surveying and wants to push ahead in that subject, and his employer will arrange to release him for a course in the College. Out of the 300 men there would probably be 150 graduates, who in the main attend the College to follow special courses adapted to their peculiar requirements.

The whole of the day work is of University standard, excepting the work of one little group—the Bakers.

Evening Classes—General Section.

The Evening work is in two distinct sections. The large General Section is on a par with the day work as to standard,which is indicated by the fact that there are from 150 to 200 University graduates in the Evening Classes. Entrance upon this work is preceded by preliminary examination only in Mathematics in regard to non-engineering subjects; in engineering subjects a preliminary knowledge of Drawing is also required. This standard, which marks the beginning of the evening work in the main section, is the point at which students from Continuation Classes conducted by the School Boards around Glasgow enter, the latter having general courses leading to particular departments of the College under agreement with the College authorities, the work being regulated by a Joint Committee.

An officer of the College visits all the surrounding classes to see that the work is done in accordance with the agreement, that the syllabuses are correct, and that certificates are issued only to students who have satisfactorily done the work and reached a desirable standing. The volume of this work can be judged from the statement that every class of any importance, within 30 miles of Glasgow, is affiliated with the College, and that the numbers in these classes

reach about 7,000, while there are within the College itself about 5,000; so that with the day students the College is the centre of organizations affecting about 13,000 or 14,000 students.

No work is done in the College of as low a grade as is done in these Supplementary Classes; there was an agreement that there should be a strict line of demarcation. The College had to send down to the Supplementary Classes hundreds of students, but the attendance has increased tenfold, and they are coming back very much better prepared than before, because they are giving very much more time to preparatory work. A boy, who has left the Elementary School at 14, has to go through a preparatory course of possibly two and usually three years before going to the College, so that there is good material with which to carry on the evening classes.

Evening Trade Classes.

The other side of the evening work is the Trade Classes, and to this problem the Governors are giving very serious attention. Dr. Stockdale said he could not say that a satisfactory solution of the problem had been found. The classes have grown bit by bit; the plumbing classes are the oldest, having existed for 30 years; sheet metal workers were the next, then the decorative trades, then printers, and thus bit by bit the College was led into the provision of a great deal of instruction which had no relation to the mass of the evening work.

The general tendency of the last Act of Parliament and of the policy of the Education Department of Scotland is towards putting all this trade work under the School Boards. The main work of the College is growing so much that something will have to be put out of it to allow for that legitimate growth, and Dr. Stockdale thought that almost inevitably it would be the Trade Classes.

Special Institution for Trade Classes.

Personally he would like to see established a big separate institution which would provide for all the trades concerned in the work of the district, with relations to School Boards similar to those of this College, that new institution providing for the rank and file just as the College endeavors to provide for the higher ranks of the industrial world. This was Dr. Stockdale's personal view, and he added that what he said on this subject had not been considered by the Governors and adopted as their opinion.

He thought the College and its work were big enough as an administrative unit, and that if it grows any larger it cannot be properly looked after. He therefore personally deprecated the indefinite expansion of the work such as would follow a decision to retain and develop the Trade Classes within the College walls, as these could form a section which might well be dealt with separately. He thought that they would have to be in a building separate from the Continuation Classes, because of the necessary setting aside of workshops with very extensive and complete plant. At present the whole of the

basement of the College from end to end (350 ft.) with the exception of one room is given up to the Trade Classes. That type of student could not be got into the Day Classes, the Baking School being the only one in which, during the day, anything is done in the way of trade work. The ordinary operations which affect industry prevent men from coming in during the day, as they must earn their bread and butter.

It is not the intention of the Trade Classes of the College to teach a trade. The practical classes are open only to those who have had sufficient experience to profit by the class. In that way the Trades Union difficulty is met, and yet at the same time the classes are left open to those who have had workshop experience.

The Baking School.

The College was approached a short time ago by the Master Bakers of Scotland with a request for help stating that, although the industry has become very important and a large number are engaged in it, very little is known about it from a scientific point of view. The College authorities agreed to do what they could, and the Master Bakers subscribed among themselves about £4,000 to equip rooms for the instruction of bakers. One of the Associates in Chemistry, who had also a practical knowledge of bakery, was put in as lecturer.

The Baking School forms a little world within a world, and is apart from the general working operation of the College. Ten or twelve men—mostly all sons of bakers—give their whole time to that work, and are looking forward to succeeding their fathers in business.

Probably the Baking School will always be treated differently from others, because the bakers of Scotland have made important sacrifices to establish it. They worked for many years, long before there was the present strong feeling in favour of education, and today the Master Bakers of Glasgow give the College over £100 a year and provide the material used in the Bakery School.

Dr. Stockdale said the way in which science could help the baking trade was very astonishing. He told of an extensive baker from Edinburgh who a few months ago came to the College saying that everything was going wrong —thousands of loaves being turned out every day that were practically unsaleable—and asked what could be done to help him. The College man, on investigating, found a colony of foreign bacteria in possession of his bakehouse. He told the baker what to do; and after he had done it everything was all right.

Preliminary Examinations.

There is no difference in the entrance standing between the Technical College and the University, though there is a difference in methods, and it is hoped that the changes made two years ago would simply anticipate the work of the Joint Committee of the Universities.

The Joint Board of the Scottish Universities controls the examination for admission to them, and at present this College does not come under that, but will have to do so and adopt the same preliminary if and when the change in the University takes place.

One feature that must be kept in view is that the Secondary School system of Scotland terminates with the Leaving Certificate at the age of about 17, and Dr. Stockdale hoped that that Leaving Certificate would be accepted for matriculation without question in any faculty in any of the Universities. To all intents and purposes it is accepted now, but accepted for individual subjects; but he would like to see it accepted as a unit because, being the completion of the Secondary Education system, it would mark the entrance to the University.

In addition to the information obtained from "Conversation" with Dr. Stockdale, further particulars were learned by visiting the Institution and by examining its publications. The features of use to Canadians are mentioned hereafter.

Evening Classes.

All students, except those afterwards exempted, who propose to enter the Evening Classes are required to pass an entrance examination in Mathematics.

Those who have obtained Course Certificates from any recognized Continuation School are admitted without further examination. The entrance examination is not required from students over 16 years of age proposing to enter classes in Music, Bacteriology, Biology, Geology, and Physiology, but they are expected to have received a good general education.

Students over 16 years of age joining Trade Classes are exempted from examination, but are strongly recommended to qualify for admission to classes related to their subject in other Departments of the College. The Trade classes are:—Textile Manufacture, Boilermaking, Decorative Trades, Plumbing, Sheet Metal Work, Bootmaking, Printing and Allied Trades, Watch and Clockmaking, Breadmaking, Confectionery, and Tailoring.

Students must satisfy the Heads of the Departments in which they wish to attend classes that they are prepared to profit by the instruction provided. The Organizer of Continuation Classes in Science is present each evening to advise junior students joining the College for the first time. Advisers for the several courses of study leading to the College Certificate have been appointed, whom students are recommend to consult.

Enrolment of Students.

The enrolment at the college in 1910 was as follows:—

	Intermediate Students	Class Enrolments.	Student-hours.
Day Classes.....	523	2,189	210,062
Evening Classes.....	4,944	9,038	328,416

Occupations of Evening Students, Session 1909-1910.

Men.

Mechanical Engineers and Draughtsmen, and Structural Draughtsmen	1,329	
Boilermakers, Ship Platers, Shipwrights, and Ship Carpenters	149	
Foundry Managers, Blacksmiths, Brassfounders and Finishers, Moulders, Steel Smelters, and Roll Turners	52	
Tin and Copper Smiths, and Sheet Metal Workers	112	
Civil and Mining Engineers, and the Mining Industries	314	
Electrical Engineers and Draughtsmen, and Instrument Makers	186	
Telegraphists, Telegraph and Telephone Mechanics	143	
Opticians and Watchmakers	60	
Clerks, Travellers, and Civil Servants	304	
Teachers	146	
Architects, Measurers, and the Building Trades	677	
Chemists, Gas Manufacturers, Druggists, Drysalters, Paper Makers, Dyers, Colour Makers, and Bleachers; Paint and Oil Trades	198	
Printing and Allied Trades	141	
Cabinetmaking and the Furnishing Trades	59	
Textile Trades	66	
Tailors	70	
Bootmakers	57	
Warehousemen and Salesmen	124	
Bakers, Chefs, Cooks, Grocers, etc	399	
Other Trades	32	
No occupation, or occupation not stated	133	
		4,751

Women.

Teachers	78	
Chemists, Telegraphists, Clerks	19	
Dressmakers, Milliners, etc	12	
No occupation, or occupation not stated	84	
		193
Total		4,944

(2) WEST OF SCOTLAND AGRICULTURAL COLLEGE.

During the Session of 1910-11 there were in attendance at Day Classes 111 individual students; at Evening Classes 111; at the Kilmarnock Dairy School 240. A steady annual increase since the College was opened in 1899 points

to the urgent necessity of more accommodation. 54 students followed full consecutive courses for the Diploma or Associateship of the College. The regulations allow recognition of attendances at a rural course under the Provincial Committee to qualify *pro tanto* for the College diploma.

Extension Lectures in agricultural subjects have been delivered in 65 different towns and villages, and by arrangement with County Councils and other Local Authorities, classes with from 5 to 20 lessons in each have been conducted in Argyllshire at 10 centres, Dumfriesshire 17 centres, Lanarkshire 4, Ayrshire 5, Kircudbright 9, Perthshire 5, and 1 centre each in Renfrewshire, Wigtownshire and Stirlingshire. Dairy Extension work is also vigorously carried on.

Horticulture lectures have been delivered at 47 centres, and 55 School Gardens established in the different counties related to the College.

The Poultry Department has been strengthened by the appointment of a Lecturer, and Extension Lectures on Poultry Husbandry have been given in 26 centres.

A large number of *Demonstrations* have been given in different parts of the division of Woods and Forests.

Farmers engaged in *Cheese-making* continue to be supplied with pure cultures by the College.

The experiment of linking together related subjects to form a course has resulted in a greater number of students receiving systematic instruction.

(3) GLASGOW ATHENAEUM (COMMERCIAL COLLEGE).

The number of individual students in the Session 1910-11 was 1,402, the enrolments in the various classes being 2,758. At the close of the session 917 students presented themselves for examination, and the work done, as ascertained by independent examiners, is stated to be of a high standard.

The classes now number 128, the staff numbering 31 as against 13 five years ago.

Courses have been instituted in the Law of Shipping and Marine Insurance, Law relating to Railways, etc., the Money Market, Patterns, Designs and Trade Marks, special Day Classes being formed in order to encourage pupils from Secondary Schools to continue special studies before entering upon business. The result justified their continuation and extension.

The experiment of linking together related subjects to form a course has resulted in a greater number of students receiving systematic instruction.

Earnest consideration is being given to the question of co-ordinating the College work with that overtaken by School Boards.

(4) GLASGOW SCHOOL OF ART.

In Scotland the leaving certificates (Intermediate and Higher) are the meeting-points for school graduation, and the radiating points towards graduation in the professions. It is necessary to emphasize the facts: (1) that Drawing runs through the entire curriculum, the minimum time being 1½ hours weekly

in the earlier stages, and 2 hours in the later; (2) that the Intermediate Certificate is granted on the results of inspection and examination at the medium age of 15, not for isolated subjects, but for a well-balanced course of study, including Drawing; (3) that it is not a final certificate, but a passport to higher study; and (4) that the higher Grade Certificate in Drawing is awarded to successful students on a minimum of two years' further study.

Higher art studies, as well as technical, are under the control of the Central Institutions, which include the Edinburgh College of Art, Glasgow School of Art, and Aberdeen (Gray's) School of Art. Committees of Central Institutions are composed of representative men, appointed from local bodies such as town councils, universities, school boards, trade societies, etc.

Universities have not been identified to any extent with Art teaching. In 1880 a Chair of Fine Art was founded in connection with Edinburgh University, but the functions of the Professor consist chiefly in giving an annual course of lectures, of which little advantage is taken. It is believed the time is not far distant when Art will be more closely associated with collegiate courses.

The certification of Art teachers, hitherto based entirely on the result of practical attainments, such as acceptance of works and personal examinations, will be conditional in future on the possession of the Intermediate Certificate; further study of general subjects of education, including Art, during a period of two years as Junior Student in training; and the diploma of a Central School of Art, covering a period of two, three, or four years. Attendance at a training centre for professional instruction in teaching methods, principles of education, etc., is also necessary.

Students preparing to be teachers of general subjects must obtain the Intermediate Art Certificate, succeeded normally by at least two years' study as Junior Students, during which it is expected that the Higher Grade certificate in Drawing will be obtained. Those who show special aptitude may be recognized as qualified to give instruction in Supplementary Courses.

Art Related to Industries.

More attention has recently been paid to the bearing of Art teaching on subjects relating to industries—their design, technique, and economic production. The satisfactory completion of a definite course in the Central Schools is attested by the award of the school diploma. The value of these diplomas is being increasingly recognized by employers and teaching bodies. Central and more important schools are equipped with craft rooms.

In view of the large number of occupations which do not call for extensive Art training, but in which Drawing forms a valuable adjunct, courses are provided which include Free Drawing and Technical Drawing, Geometry and Mensuration.

In Scotland the term "Free Drawing" includes what was formerly known as free-hand, model, and light and shade, with all their modern developments. Technical Drawing in this connection means the application of Drawing correlated to subjects of a technical nature.

Scottish students have not hitherto enjoyed adequate opportunities for higher Art study, but the future looks much more promising.

The influence of Art Education on industries will manifest itself more apparently in the demand for good and tasteful products, than in the creation of Art objects; so many are users and so few producers. Hence instruction in Art matters must be a fundamental feature of the Art Education of the future. Sufficient time has not elapsed to demonstrate fully the effect on students and employers of the present system.

The Functions of a School of Art.

Taking Glasgow and its School of Art as typical of most of the larger cities of the United Kingdom, the following is selected as an interesting statement embodying the views of Dr. Newbery, Principal, in reply to the question "What are the functions of a School of Art with special reference to craft classes?"

A craft class may be defined as a course of instruction in any special production to which Art is applicable, and in which the producer must be an Art workman. A craft class is really a trade class, for instruction in the nature and limitations of material. In the establishment of craft classes it should be taken for granted that the School of Art is a central institution for instruction in advanced Art, and that it is set down in the middle of an industrial population, whose chief work is the production of manufactured material or articles to which Art is applicable. Its objects then are,—

(1.) To supply to the utmost the needs of any and every local manufacture in which the application of Art plays any important part. This should be its chief work.

(2.) To aid in the resuscitation and revival of any Art industry which may once have been traditional, but which the pressure of commercial competition may have either thrust into the background or sapped of any vital life.

(3.) To endeavor to create new industries, provided always that the difficulties attending such creation be not insuperable.

Glasgow Industries Requiring Art.

(1.) Glasgow has a multitude of manufactures, but it is primarily a weaving town. It makes carpets, tapestry goods—such as curtains and hangings; cotton prints; muslin goods (particularly the harness variety); linen, damask, etc. But it prints wall-papers; it makes furniture; cast-iron work is a noticeable production; and there are one or two wrought-iron firms (one fairly good). It has a large trade in wood carving; it supplies architects with both wood and stone carvers; glass-staining is a noticeable, and more than locally appreciated art. The art of pottery is being taken seriously by at least one manufacturer. The city has silver-chasers, and jewellers' manufacturers, die sinkers, and commercial engravers. Lithography, though largely mercantile, employs many designers; there are the usual decorators' and painters' trades; mosiac and marble workers claim attention, and others, whose needs must be met.

Under (2.) comes needlework and embroidery, which in past time made Ayrshire famous, and an endeavour is being made to revive not only its acceptance, but also that of the art of lace-making.

Under (3.) comes the tentative effort being made, chiefly through the medium of the School of Art, coupled with a firm of well-known publishers, to afford work for women in the craft of book-binding and decoration; also to meet any possible demands that may be made by local gold and silversmiths for enamelling, and designs for gold and silver work and jewellery.

This list of the arts and crafts presents a fairly full budget for any School of Art to meet, but the demand may be taken as typical of most of the larger cities of the kingdom, with the exception, that in specialised centres, such as Birmingham, Sheffield, Manchester, or the Potteries, a local need bulks which simplifies and centralises craft work.

Courses in Design and Decoration.

Guided by local conditions and demands, the Glasgow School of Art has the following courses in design and decoration:

Technical Studios have been specially erected to enable students to learn design in and through the use of material. To show the process of weaving, a loom has been erected and a practical weaver gives the demonstrations.

COURSES.

Principles of Design.—Lectures and demonstrations.

Applied Design.—Textiles—Carpets—Wall Papers—etc.

Stained Glass.—Design—Material—Technic—Preparations of Cartoons—Colour Schemes—Study of old examples—Drawing of Figure, Foliage and Ornament—Painting and Leading—Finished work.

Decorations of Interiors.—(Churches, Public and Private Buildings)—Drawing from the Cast—Drawing and Painting Flowers—Principles of Ornament—Architecture—Colour Schemes—Stencil Cutting—General application.

Needlework and Embroidery, Applique, &c.—Foliage in Outline—Study of Flowers from Nature—Design and Application—Technic—Study of old examples—Original work in Silk, Wools, and Linen.

Bookbinding and Decoration.—Outline from Cast—Foliage from Nature—Design to fill given spaces—Study of old examples—Tools and their uses—Material—Preparation and Execution of original design.

Ceramic Decoration, Design and Painting.—Outline from Cast and Foliage—Still Life Painting—Modelling, Design, and application—Materials—Colours—Processes—Glazes—Firing.

Enamels.—Ornament—Figure—Life—Still Life—Design and Composition—Technic—Finished Work.

Mosaics.—(Same as above.)

Block Cutting and Printing in Colours.—Drawing and Shading Ornament from the Cast in line and wash—Antique—Life—Design and Figure Composition. Experiments in Printing will be made by a Printing Press.

Sgraffito and Gesso.—Drawing and Modelling Ornament from the Cast—Antique—Life—Architecture—Colour Schemes.

Design, Lithographic and Poster.—Ornament and Figure from the Cast—Life, Drawing and Painting—Design—Figure Composition—Colour Schemes and their application—Technic—Printing—Finished Works.

Metal Work—Gold, Silver, Brass, Copper and Iron.—Drawing Ornament and Figure from Casts—Design—Modelling—Ornament and the figure—Material—Technic—Repoussé Work—Chasing and Engraving—Original Work.

Wood Carving and Engraving.

Stone Carving.—Drawing and Modelling Ornament and Figure from the Cast—Life—Figure Composition Design—Copies of old work from examples and photographs; Original Designs.

Beginnings and Development.

The Glasgow School of Art was founded in 1840. In 1892 the Governing Body was made representative of the principal Public Bodies of the city, and the School was registered under the Companies' Act. In 1894 the Governors began to collect public subscriptions for the erection of a new building, part of which was formally opened in 1899. In that year the Scotch Education Department took over the control of the Science and Art Education of Scotland, and in September, 1901, the Glasgow School of Art was established as the Central Institution for Higher Art Education for Glasgow and the West of Scotland. In 1906 the growth and development of the School made the completion of the building a matter of necessity, and this was accomplished three years later.

The Governors are authorized to grant Diplomas and Certificates to students upon the results of a course of instruction, together with special tests. They bear the official endorsement of the Scotch Education Department, and are accepted by that Department as proofs of technical capacity.

The various Secondary Education Committees of the Country are empowered under the Education (Scotland) Act, to grant maintenance bursaries and maintenance scholarships to enable duly qualified students to obtain education in the Day and Evening Classes of the School of Art as a "Central Institution". Certain sections of the work of the School have been co-ordinated with that being done by the Glasgow Provincial Committee, the Technical College and the chief School Boards of the City and district.

Relation of Art School to Primary Schools.

The scheme of Drawing studies agreed upon between the School of Art and the Glasgow School Board, intended to form a connecting link between the art work of the Primary School and the School of Art, has been accepted and put into working effect by at least a dozen other School Boards, so that their Continuation Classes in Drawing have been advantageously linked to the Evening Courses in the Central Institution.

An inspection of the work in the Continuation Classes of the second year results in a number of students being selected for further instruction in the School of Art. These classes are intended not only for students who desire to become painters, sculptors or designers, but also for those who wish to obtain a general knowledge of and practice in Art and the Artistic Crafts. Drawing classes generally are, however, disappointingly small. Notwithstanding every effort having been made, both by School Boards and by members of the Master Painters' Association, to bring before them the advantages of Art instruction, it is doubtful if more than 10% of the apprentices and journeymen have taken advantage of the facilities provided.

Enrolment of Students.

The ordinary students in attendance (1910-11) at the various classes—day and evening—in the four Departments of the work of the School were as follows:—

Drawing and Painting	458
Design and Decorative Art	99
Modelling and Sculpture	41
Architecture	125
Total	723

CONVERSATION WITH MR. NEWBERY.

Information obtained in "Conversation" with Mr. Francis H. Newbery, A.R.C.A., *Director of Glasgow School of Art, and* Mr. Joseph Vaughan, *Superintendent of Art Instruction under the Glasgow School Board, and by a visit to the School of Art.*

The Glasgow School of Art is a state institution managed by Governors elected from public bodies in Glasgow, the Education Department at London paying half the cost of maintenance. The efforts of the institution are devoted to raising the standard of Art throughout the length and breadth of the land. The attainment of this end is being achieved in no small measure through the work of the Elementary School teachers who come to this School for their training.

The School aims to make art applicable to industries. The object is to give people good taste and skill and power to apply good taste to the things they make, and to their own occupations. The School starts with the supposition that every boy and girl has an instinctive desire to express himself or herself in terms of Art. The point is to define exactly what is meant by Art. Mr. Newbery starts with the desire of the child to decorate itself, to surround itself with forms which are copies or impressions of what it sees, and he endeavours to make the child observe and study nature, and through this desire of decoration applied to itself or its surroundings to cultivate that side of beauty. It is a very simple proposition to recognize a certain power which the child possesses, and to deal entirely with that.

The old idea was that the school-master had so many homeopathic doses of Drawing to compound and count, throwing in stuff of no use to man or beast, and to serve that out to the children. The new idea is that Art students, like anybody else, have certain powers and instincts to be cultivated and directed. Mr. Newbery said the result had warranted the new point of view, and he believed there were now in the west of Scotland a large number of people teaching Art by endeavouring to develop this instinct in the child and directing its attention to the observation of nature from a purely artistic point of view. Between 800 and 900 teachers pass through the School every year. He believed that each of those teachers, in turn, is a missionary exercising an influence upon the children. Only by such education could they hope to get at the big thing called public taste, because the little children in the school are the future public.

No distinction is made between the Art student who comes on Monday morning and works five days a week and the man or woman who comes on Saturday morning as a school teacher. The latter are not school teachers to the Director and his staff. The moment they enter the Art school they are Art students, and are submitted to the same Art influences of environment, instruction, direction, and any other that the staff can bring to bear upon them.

Need of Education in Taste.

Many evening class students work in Glasgow shops, but the problem here as elsewhere is this: Until the public can be brought to the point where good taste becomes national, if not universal, the designer works against odds, for the manufacturer is there to sell his goods to the public, and in plain English he sells them to people whose taste is worse than his own. Today 30 men and women are finding a living in Glasgow in Arts and Crafts who ten years ago could not get a foothold. They approach the public directly in the same way as the man who paints pictures. The girl working in a studio receives an order to make a piece of embroidery, to paint a picture, to make a piece of silver work or of repoussé work; she puts the taste into the article, and all over Glasgow the manufacturers' shops are filled with such articles for which this Art School is responsible. The people compare what they get this way with what the manufacturers of machine-mades sell, and have taken the view that this is the thing to produce. These Art works have developed a standard of taste. The school is turning out Art craftsmen, and slowly but surely the quality of the artistic needlework, pottery, silversmithing, etc., which the students are putting on the market is elevating public taste. It follows that in time the tone of machine-manufactured goods will be similarly elevated.

Should Schools Manufacture Goods ?

The question of the manufacture of goods in schools for sale is a very involved one, the Director remarked, and one that neither this Art School nor any other can settle directly. Manufacturers in Glasgow pay rates to support the experts and others in the Art School, and if the School were to set the manufacturers against them, they would say, "We are not going to run this school in order that it may compete with our own works." They would not have a School of Art that was a factory. Therefore all the School had to do was to turn out designers seeking clients and customers. Mr. Newbery stated that in Germany last year he found exactly the same problem, together with others.

School Produces Designers, not Designs.

Mr. Newbery believes that Art education should be far more general in its application; then graduates can go to a manufacturer and specialize in what they want. He told of a manufacturer coming from Paisley for a man to take the place of his foreman designer. The man turned out to be a very

big success and revolutionized the establishment, increasing the trade and making the whole thing smarter. As a matter of fact what he did when he got into that firm was to change almost entirely the style of design they were doing, and he 'got there' because he changed the style. "This School carries out a policy of its own in Art, producing designers, not designs, not subserving the needs of any particular industry. If a student is working towards, say, textile designing, his exercises are supervised by an expert from time to time, and any defects or features that are impracticable are pointed out; but the School does not have advice from anyone in trade as to what they think would be suitable for the School to do to meet their industrial conditions."

At the close of the term all the design students, who desire the School diploma, submit their works to a jury consisting of an artist, two designers, an architect and the best manufacturer who can be obtained, who is an expert on the manufacturing side.

Art and Practical Processes.

In pottery work the idea is that there is no preconceived design. It is not a question of having something made and then applying Art to it, but in the mere doing of it Art is the result. When such articles are taken into the home they exercise an influence, and people then want to buy something more of the same sort.

Pupils learn the colours very quickly, and like quiet colours—greys and blues, greens and purples. The pupils are kept away from floral forms, but the appearance of a flower can be made like small circles, and it does not take long to evolve floral forms from purely geometric forms. Pupils must be taught that embroidery is not painting, and that it will not do things that paint will do.

Twice a week a stained glass expert comes to the School of Art, and though he does not design he knows how to put a window in and tells about the lead-line, etc. The School is thus kept in touch with the technical requirements of the trade. The School eliminates the idea that the designing is done for any particular manufacturer, but the student at the school wants to express himself, does so in this way, and is kept right by experts. The putting in of lead lines must be endorsed by a man who knows the trade, else the design in stained glass may be like some designs in textiles—impossible of execution. The School endeavours to accept and carry out any demand that may be made upon a man to express himself.

Revival of Art Needlework.

There is a general tendency to revive Art Needlework, but it has not yet been generally placed upon a good educational footing by relating it to discipline in Drawing and Design. The Inspector notes that it appears in some cases to be difficult to persuade teachers and pupils that pleasing designs can be produced with the needle even when the stitches used are of the simplest and most

familiar character; but where this is once properly realized there is seldom any desire to return to the ordinary purchased design traced upon the material. With this craft, as with wood-carving and repoussé, systematic success can best be obtained when a close connection is maintained with the Art Classes of the School.

The Dorset Smock.

A rather interesting experiment in educating the public taste is being carried on by Miss Macbeth, an Instructress in charge of Sewing and Embroidery. Director Newbery said that when he was a boy in Dorset, the "Dorset Smock" with its sewing and the artistic decorations of the dwelling were features of that countryside. The people who made those smocks never heard of the Art School in their lives, yet made extremely charming works of Art on traditional lines. So good was their work that when he could get hold of an old smock he bought it for the museum or Art School as a work of Art relative to the craft.

In sewing, as taught in this School of Art, school mistresses receive some practical illustration of the belief of Art teachers in the application of Art to the things of daily life. Hitherto they had been doing designs based upon floral forms, etc.; now they had evolved a scheme whereby, in the very act of joining two pieces of cloth together, the stitches were so arranged that they formed a kind of decoration, the result being a work of Art.

It is a long step forward if people can be brought to see that Art ensues by simply doing a thing in an artistic way, for they then begin to feel that Art is not something exterior to themselves, or a technique apart from themselves.

The child is a better artist at the end of the process just described than before, because the Art has developed outward—which all Art must do. Miss Macbeth said the children in the Kindergarten had been doing similar work in paper; now they do it in textiles; and it goes on logically from that.

The Continuation Classes use construction stitches to make Art garments—decorative construction all through. The first four stitches are the heavy stitches, the tacking stitch, top-sewing and herring-boning stitch. The child learns these stitches in the early stages. At seven years old it learns the plain stitch. Darning is begun as decoration. The principle is applied all the way through.

Collaboration with Architects.

A life-size clay model was shown, and it was stated that one student made two full-sized figures in collaboration with an architect, and brought himself into touch with the actual requirements by working with the architect. Another student went recently to a new building in Glasgow and made figures for the doorway in keeping with the style of the place and the architect was so much struck with these pieces that he put them up. Architects come to the school and ask for things and get them for their buildings.

Keeping in Touch with Things outside the School.

All the professors have studios in the School. They have three days on and three days off duty at the School; they keep alive in Art by touch with the outside world.

Mr. Newbery considers the Glasgow School the most practical Art institution in the world, its aim being to do the greatest good to the largest number. When a school is tied to a manufacturer it cannot do that, for the latter would not allow it, he being the biggest number. This school is concerned solely with being of the utmost utility from an educational point of view.

During the winter 478 teachers were in attendance ; in July another batch would be coming out of the glens and the Highlands, and in August still another batch. This is University Extension.

There is a set of lectures during the winter on related subjects—History of Art, Architecture, Sculpture, etc, because a student who is going out into the world to carry on a tradition ought to know the history of that tradition. Last year there was a brilliant set of lectures by University men on social and cultural subjects supplementing the History of Art, because it is absurd for a man to try to understand Greek Art unless he knows both Greek sculpture and the social conditions that produced that Art.

CHAPTER XVI: ORGANIZATION OF EDUCATION IN THE COUNTY OF FIFE.

Introductory.

The Commission was informed that the organization and work in the County of Fife might be taken as representative and illustrative of much of the best that was being undertaken outside the large cities in Scotland. The County was visited and some of the more important features are reported upon.

The occupations followed in the County of Fife may be classed as purely Rural, Mining, Industrial, Commercial, Fishing and Housekeeping. These are in addition to the professional occupations usually followed among such people. Provision is made by the various School Boards and the County Education Committee to meet the educational needs of young persons for these several occupations. The School Boards make provision for Primary Education and Continuation Class work, particulars illustrative of which have already been given. In the towns there are Secondary Schools for general education which prepare for occupations or for entering colleges and universities. Under the Education Act of 1908 most of the Continuation Class work for Industrial or Technical Education, which was formerly under the County Education Committee, has come under the care of the several School Boards. A strong County Education Committee supplies specialist teachers (practically sublets them to local School Boards) for such subjects as Mining, Household Science and Industrial work where the school population of the locality does not require the whole of the time of such a specialist. These specialists circulate around a district and undertake their work in classes under a number of School Boards.

SECTION 1: CONTINUATION CLASSES.

Mr. James Mitchell, the enthusiastic and capable organizer of Continuation Classes, has the general supervision of the work under the County Education Committee of which he is Secretary. The following points were gleaned from conversation with him:—

Continuation Classes or Courses are provided for the chief occupations of the County, viz. Agriculture, Fishing, Mining, Engineering, Textile Manufactures, Commerce and Housekeeping.

For *Agriculture* there are not as yet any classes under Division III. Students who have gone as far as to be ready for such work go on to the Agricultural College at Edinburgh.

Nature Study is provided for at the Rural Schools.

There is a *Course for Teachers of Rural Schools*, continuing every Saturday during one school year. This course is given at Anstruther, where there is a

suitable School Garden. Such teachers receive an allowance to cover travelling expenses and while attending the course continuously, during the holiday period, they receive 15s per week living allowance.

Fishing. In the centres where a large proportion of the population follow fishing, the Nature Study in the Primary Schools is given with the needs of that occupation in mind. A special Fishery Course of 3 weeks' duration is provided for the fishermen at the Fishery Station at Aberdeen. Particulars of that are given under Schools for Fishermen. The County Education Committee name two or three men from each of the several fishing communities and pay their expenses while taking the three weeks' course. The fishermen appreciated the course very much and said they derived benefit from it. The information obtained by them was quickly and readily passed on to others who had not the advantage of attending the course.

For the *other occupations*, such as Mining, Engineering, Weaving or Textile Manufacture, Commerce and Housekeeping, Preparatory Classes are held at the small centres. Then the pupils go to larger centres for courses in Divisions II and III. On evidence of satisfactory progress, such pupils receive travelling expenses to these larger centres. After completing a course in Division III at one of these centres, the pupil may go on to the Evening Classes at one of the Central Institutions. Or when he completes the work in Division III, he may become a day pupil at one of the Central Institutions, and the way is open to him to proceed to what is practically the equivalent of a degree.

Mr. Mitchell considered the essentials in organization and effective maintenance of Continuation Classes to be as follows:—

1. An enlightened and energetic County Education Committee and like School Boards;
2. A capable and enthusiastic Organizer;
3. Competent, sympathetic and intelligent Teachers.

Inspector's Report on Continuation Classes.

Mr. J. C. Smith, His Majesty's Inspector for the district including the County of Fife, reports on the Continuation Class work in his district. The following points are selected as illustrative and suggestive for Canada.

For several years Fife had been very fairly provided with Continuation Classes—very fairly, that is, in comparison with most country districts in Scotland. But this was due in large measure to the activity and foresight of the County Committee. During the Session 1908-09 (in which is included the spring session as well) Continuation Classes were conducted at 69 separate centres, about half of which were under the management of the County Committee. Except in the larger towns—where the School Boards conducted classes in all Divisions—the distribution of management proceeded on this principle: that the County Committee should manage all Technical Classes, whether Industrial or Domestic—and, of course, the Domestic Classes had by far the largest enrolment—leaving to the School Boards the management of Division I, and of any literary subjects that might be desired; classes in commercial subjects were conducted by both authorities.

With the passing of the 1908 Act, the establishment of Continuation Classes became a statutory duty on School Boards, and the County Committee proceeded to divest itself of the management of its classes, except a few, that were considered to serve a wider area than was embraced by any single Board or practicable combination of Boards. This process, I may add, is now practically complete; the County Committee now retains only the management of the important Mining School at Cowdenbeath; and at the same time the classes formerly conducted

by various local committees have all but one been absorbed by the School Boards. These transferences might have occasioned a partial collapse of the Continuation Class system, but for the fact that the County Committee had in its employ a considerable staff of expert teachers, whom they retained, sub-letting their services (so to speak)to the School Boards at less than cost price. Continuity was thus maintained, and the County Committee, though no longer managing these classes in the technical sense, still helped to control their organization in no small measure.

Provision is made for Rural Continuation Classes in a comparatively large number of villages in Fife. Lads of 14 to 17 employed on farms are urged to attend the day school in the afternoon for several days or for every day in the week. That can be done without serious inconvenience to anybody.

Urban Continuation Classes have been established all over the industrial area of Fife, and a very satisfactory Continuation Class system is said to exist in skeleton. The need now is to fill that up by large attendance of those in need of education.

Percentage of Attendance.

As instances of the number of individual pupils who attend the Continuation Classes, the case of Dysart is cited, which, with some 3,500 pupils on the rolls of the day schools, has no fewer than 850 students enrolled in the Continuation Classes. In Kirkcaldy the proportion of Continuation Class students to the total number of boys and girls between 14 and 17 was estimated at 40% in 1910, as against 27% in 1909, In the case of Dunfermline, where there are from 1,200 to 1,300 boys and girls between the ages of 14 and 17, only 351 of these, or 28%, were enrolled in 1910 in Continuation Classes. The Inspector says:

What about the remaining 72%? That is the problem in a nutshell. The first thing is to bring home to people the fact that the problem exists, and what is its nature and extent. When we look at our fine Technical and Mining Schools we are apt to think that we are doing quite well. And so in a sense we are. For those adolescents who know what they want, for boys and girls who mean to get on in life, who have a definite ambition and want help in its pursuit, many of my Boards are doing very well indeed. But this class, as we have seen, amounts even in a favoured district only to 28% of the whole. What of the rest? Are we to let them drift? The attitude of many well-meaning people amounts in effect to that. "There is no demand for these classes," they say; and the classes in consequence are either not started or are soon abandoned. It is this attitude which we have first of all to combat. We have to impress on School Boards that their responsibility for the welfare of youth no longer ceases and determines at 14.

The first step, then, is to take a census of adolescents (14 to 17), showing their occupations, the Continuation Class (if any) that they are attending, and the stage of advancement they have reached when they left the day school. In my Day School Report I have shown that 50% of our pupils leave school without qualifying; of those who qualify, about one-third leave before getting the Merit Certificate. It will be found that the 28 per cent who attend Continuation Classes consist largely of those who have obtained the Merit Certificate in the day school. So much for the extent of the problem.

* * * * *

In Dysart, on the other hand, we have a plain working-class population, no great variety of occupations, and no education tradition to speak of; the problem here is much harder, and the success correspondingly more laudable. One factor in this success has been the fact that all the Dysart Supplementary Courses and Qualifying Clas es are centralised on Viewforth Public School, and that the head master of Viewforth Public School is also the organiser of Viewforth Continuation Classes. Hence most of the Dysart children are under his charge for a year or two in the day school, and can be headed towards the Continuation Classes. It is also possible so to frame the syllabus that Division I shall be identical *mutatis mutandis* with the first year of the Supplementary Course, and Preparatory Division III with the second. Pupils can thus be transferred from day to evening class at any fixed date. This continuity is symbolized, and the prejudice, which still hangs about Division I, avoided, by describing these classes as "Evening Supplementary Courses, Preparatory and Advanced." I regard this alignment of Supplementary Course and Continuation Class work as of great importance.

Practical Measures Suggested.

A summary of the most hopeful practical measures to be taken, in the opinion of his Majesty's Inspector, are:—

1. A census of adolescents in each School Board area, with particulars as to occupation, Continuation Class, if any, attended, and the stage of advancement which they have reached before leaving the day school;

2. The appointment in each School Board area of a salaried Organizer, whose duty it will be to supervise the system of Continuation Classes. This official would co-operate with the County Organizer on the one hand, and with the employers and trade representatives on the other, to secure a system of classes that would meet the educational needs of the locality;

3. The alignment of the work of Division I and Preparatory Division III Classes with that of the Supplemenary Courses;

4. The establishment of Information Bureaus at all suitable centres.

The Information Bureau is likely to be a useful ally to the Continuation Class work, especially in industrial districts with a wide variety of occupations. The prospect is more obscure in purely mining and purely agricultural districts, where there is a steady demand for labour of one kind, and most boys go straight to the pit or the plough tail. In this activity the School Boards will be obliged to co-operate with the employers of labour and with representatives of labour, and this, too, should react favorably upon the Continuation Class system.

SECTION 2: COWDENBEATH MINING SCHOOL.

The Fife County Committee joins with the Beath School Board in providing courses at the Fife Mining School, Cowdenbeath. This is the case in the County where the County Education Committee and the School Board manage courses jointly. In other cases the County Education Committee, through its organizing secretary and by subletting specialist teachers, co-operates with and assists the School Boards.

Objects of School.

The School is established for the purpose of carrying out a liberal scheme of Technical Education in Mining and in the several branches of industry closely related thereto.

The organised courses of instruction are based on the requirements of Division III. of the Code of Regulations for Continuation Classes issued by the Scotch Education Department. Systematic courses extending over three or more years are provided, and in addition there is a Preparatory Course for those whose previous attainments do not fit them to enter at once with profit on the specialised work of their particular course.

The Laboratories are fitted in a thoroughly modern manner, and comprise:—

Chemical Laboratory.

Physical Laboratory.

Mechanical and Strength of Materials Laboratory.
Hydraulics Laboratory.
Electrical Engineering Laboratory.
Mining Laboratory.

Courses of Instruction.

In accordance with the requirements of the Code of Regulations for Continuation Classes, the student must follow a definite course of instruction in subjects relating to and having a special bearing upon some particular trade or industry or occupation.

In compliance with these Regulations, and to provide for local requirements, courses of instruction have been arranged for under the following heads:—

1. Mining. *2. Mechanical Engineering.* *3. Electrical Engineering.*

Each part of any course must be taken up in an orderly manner, and single or disconnected subjects may be taken only after the express sanction of the Principal has been obtained.

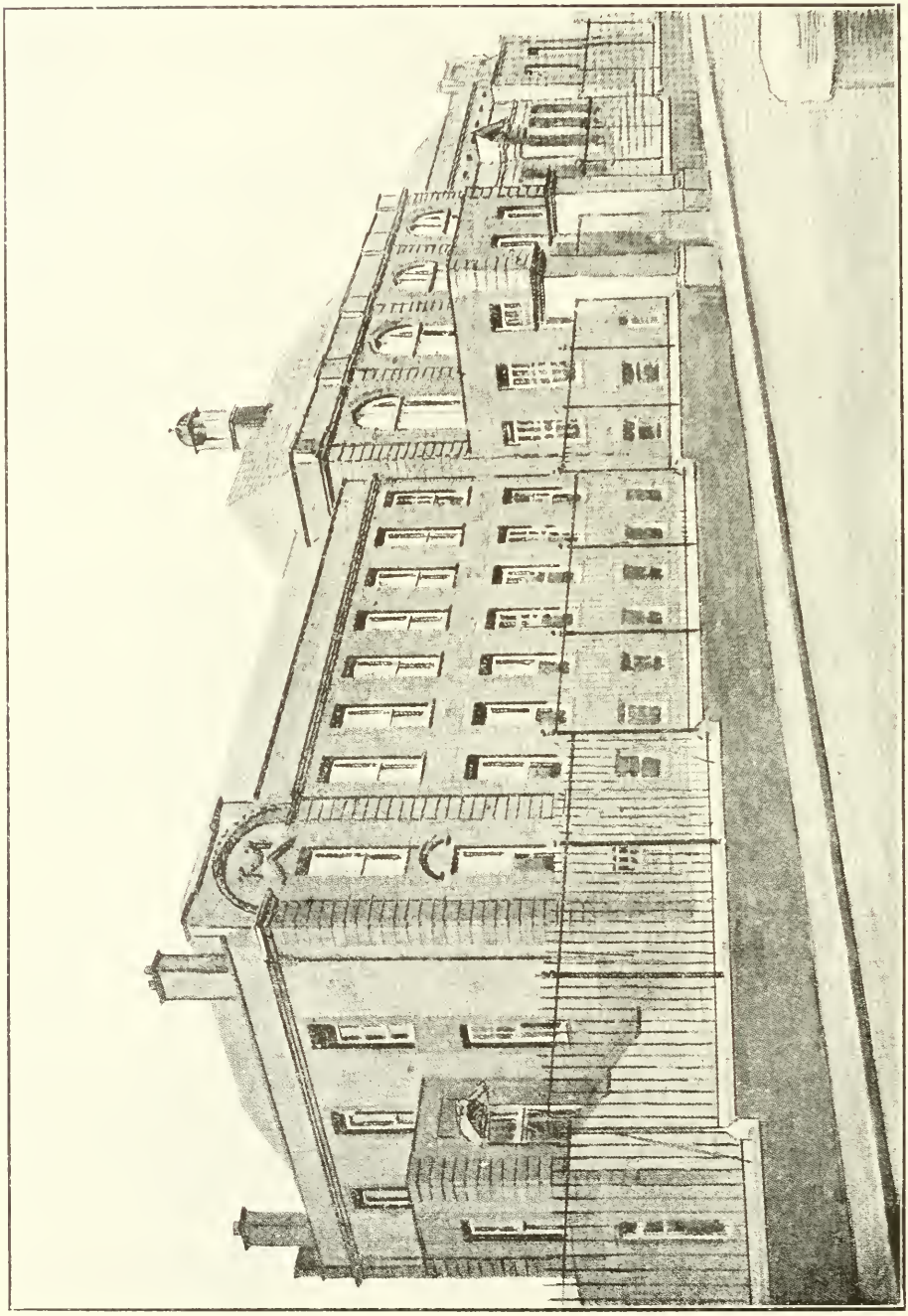
The School provides courses in Divisions I, II and III, as already described under the Continuation Classes, pages 664-5.

The equipment of the Mining School has been provided with particular regard to meeting the needs of those actually employed in and about the mines. The School itself had been in existence for about 16 years, although the new school building, where all the departments are now accommodated, was opened only a year before the visit of the Commission. Before the new building was provided the attendance at the Mining School was from 100 to 120. After the new building with its staff and equipment was provided, the increase in attendance was very large. During the Session 1910-1911 about 760 pupils were in attendance. Of these, 280 were taking the 5 years' course in Division III, 42 were colliery managers in actual service and taking a special course, and 440 were workers taking the more elementary courses. These were all evening courses.

Conditions on which the Scholarship is Paid.

Junior Scholarships or assisted railway fares are given freely to those who are qualified to profit by the courses and require such financial assistance. The following are the conditions on which the Scholarship is paid:—

1. The Scholarship is awarded conditional upon attendance at a course under Division III in all the prescribed subjects of that course for the particular year.
2. Application must be made on a form to be obtained from James Mitchell, Esq., F.E.I.S., County Buildings, Cupar, and must be in the Secretary's hands before 15th August.
3. Students must perform all their class work and exercises to the satisfaction of their teachers.
4. Students must make not less than 80 per cent of the possible attendances.
5. They must attend all Class Examinations, and also Official Examinations of the School at the close of the session.
6. Scholarships will be paid only to (*a*) unmarried men in receipt of a wage under 20s. per week; (*b*) married men in receipt of a wage under 40s. per week.
7. Distance travelled must be over two miles.
8. Scholarship will be paid in one instalment not later than 15th May in each year.



Fife County Committee Mining School and Beath Higher Grade School, Cowdenbeath, Scotland, 1911.

The Mining Course.

The Mining Course continues during 5 years. Students who have completed a full course are admitted to the 5th winter session of the course held on Saturdays in the Heriot-Watt College, Edinburgh.

A Bursary is awarded of the annual value of £50, tenable for 3 years at the Heriot-Watt College, Edinburgh, or at a University approved by the Committee, and subject to a report of satisfactory conduct and progress of the bursar at the end of every session.

In Division II the following Special Courses are given:—

1. A Class forming a preparation for the Colliery Manager's Certificate.
2. A Class forming a preparation for the Under Manager's Certificate.
3. A Half-Session Course (Jan. to April) in Strength of Materials, for Colliery Managers.
4. A Half-Session Course (Sept. to Dec.) in the Examination of Mine Air, for Colliery Managers.
5. A Special Class in Electrical Engineering, for Colliery Officials.
6. A Class forming a preparation for the Fireman's Certificate.

For the convenience of men in official positions, who find Saturday afternoon the only free time during the week, a Class forming a preparation for the Colliery Manager's Certificate and another Class forming a preparation for the Under Manager's Certificate, meet on Saturdays from 4 to 6 P.M.

The curricula include: Coal Mines Act. Ventilation. Lighting. Sinking, fitting, and pumping. Haulage. Winding. Modes of working. Mine gases and coal dust. Strength of materials. Applications of electricity to mining. Surface arrangements. Surveying and levelling.

Organised Mining Course

1. Preparatory Year's Course, comprising:—English, Arithmetic, Drawing, Mensuration, and Physics.
2. First Year's Course, comprising:—Applied Mathematics, Class I; Mining, Class I; Physics and Chemistry (Lecture and Laboratory work).
3. Second Year's Course, comprising:—Applied Mathematics, Class II; Mining, Class II; Mechanics and Steam, Class I (Lectures and Laboratory Course); Summer Class in Practical Surveying and Drawing, Class I.
4. Third Year's Course, comprising:—Applied Mathematics, Class III; Mining, Class III; Technical Electricity (Lectures and Laboratory Course); Summer Class in Surveying, Class II.
5. Fourth Year's Course, comprising:—Applied Mathematics, Class IV; Mining, Class IV; Mining Laboratory, Class I; Electrical Engineering (Direct Current), Lectures and Laboratory Course; Summer Class in Surveying and Levelling, Class III.
6. Fifth Year's Course, comprising:—Mining, Class V; Mining Laboratory, Class II; Mechanics and Steam, Class II (Lectures and Laboratory Course); Electrical Engineering (Alternating Currents), Lectures and Laboratory Course.
7. Saturday afternoon Classes at the Heriot-Watt College for students who have successfully passed through the above course. These Classes comprise:—
   1. Half-session course in the Mechanical Laboratory, making tests on engines, boilers, fans, etc. October to Christmas.
   2. Half-session course in Alternating Currents in the Electrical Laboratory. January to April.
   3. Series of Lectures on Mining throughout the session.

Arrangements have been made with the Local School Boards, whereby the student may take portions of the above course at the Board School, and the remaining portions that cannot be dealt with at the local centres, at the Mining School, Cowdenbeath.

Students working under these arrangements must be careful to complete the full course of each year before proceeding to the next year's course.

Students may take their classes in Mining and Mathematics of the first year of Division III at local centres, where such classes are held, and attend one evening each week at Cowdenbeath for Chemistry and Physics to complete their first year's course.

Similarly, Mining and Mathematics of the second year's course may be taken at the local class, and the student travel to Cowdenbeath for Mechanics and Steam to complete the second year's course.

Organized Mechanical Engineering Course.

A course of class work and laboratory practice is given in this Department and continues during 4 years.

1. Preparatory Year's Course, comprising:—English, Arithmetic, Drawing, Mensuration, and Physics.
2. First Year's Course, comprising:—Applied Mathematics, Class I; Mechanics and Steam, Class I; Practical Geometry and Mechanical Drawing, Class I.
3. Second Year's Course, comprising:—Applied Mathematics, Class II; Mechanics and Steam, Class II; Mechanical Drawing, Class II.
4. Third Year's Course, comprising:—Applied Mathematics, Class III; Mechanical Drawing, Class III; Technical Electricity (Lectures and Laboratory Course).
5. Fourth Year's Course, comprising:—Mechanics and Steam, Class III; Electrical Engineering, Class I; Mechanical Drawing, Class IV.

Organized Electrical Engineering Course.

A course of class work and laboratory practice is given in this Department and continues during 4 years.

1. Preparatory Year's Course, comprising:—English, Arithmetic, Drawing, Mensuration and Physics.
2. First Year's Course, comprising—Applied Mathematics, Class I; Mechanics and Steam, Class I (Lecture and Laboratory Course);Physics and Chemistry (Lectures and Laboratory work).
3. Second Year's Course, comprising:—Applied Mathematics, Class II; Mechanical Drawing, Class I; Technical Electricity (Lectures and Laboratory Course).
4. Third Year's Course, comprising:—Applied Mathematics, Class III; Electrical Engineering (Direct Currents), Lectures and Laboratory Course; Electrical Machine Design, Class I.
5. Fourth Year's Course, comprising:—Applied Mathematics, Class IV; Electrical Engineering (Alternating Currents), Lecture and Laboratory Course; Electrical Machine Design, Class II.

Continuation Classes.

Continuation Classes are conducted at 5 Board Schools of the Parish of Beath. These comprises courses of studies during 4 years, viz. Preparatory; Division I or First year; Division II or Second Year; and Division III or Third Year. In each year they are grouped as Commercial Course, Industrial Course, Household Management Course and Art Course.

Similar Continuation Courses are carried on at over 70 separate centres under the various School Boards within the County, not all of them carrying on all four kinds of classes or all four years of work. The classes or courses are arranged to meet the needs of the population served by the local School Board.

As already mentioned, when a pupil has exhausted the opportunity in the small centre he may receive a bursary to enable him to attend the Classes at a larger centre, and so on to one of the Central Institutions.

SECTION 3: SPECIAL PROVISIONS AT DUNFERMLINE.

The town of Dunfermline, also in the County of Fife, has made full provision for Continuation Schools under the School Board, and these are co-ordinated or lead up to the Technical Classes in the Lauder Technical School.

The Lauder Technical School.

This is a Secondary School with a Classical Side and a Modern Side. The equipment for classes in Mining and Weaving seemed particularly complete and appropriate. Evening Classes use the laboratories and equipment to a great extent. There were no day pupils attending the Weaving School up to the time the Commission visited the School.

The main building was a gift to his native city by Mr. Andrew Carnegie. It affords excellent provision for the Science and Art, as well as for Mining and other classes. It contains a fine suite of Art Rooms, including Elementary Drawing-room, Antique and Clay-Modelling rooms. There is a large Lecture Room, provided with every facility for lectures on science subjects; also Laboratories, in which students have the opportunity of practical work in Chemistry, Magnetism and Electricity, and Mining-Engineering, and rooms for the teaching of Mathematics, Building Construction, and such-like subjects. A large extension, handsomely equipped, in which electricity is utilized both for power and lighting, was opened in November 1910. Here excellent accommodation is provided for the departments of Weaving and Engineering. The suite of Weaving Rooms includes a Weaving Lecture-Room, a Laboratory for textile testing and analysis, and a large Weaving Shed, all furnished in a very complete and up-to-date manner. For the accommodation of the Engineering Classes, there are two rooms specially adapted for teaching Machine Constructing and Drawing, a large Mechanical Laboratory well supplied with testing and other machines, models, etc.; a Heat Laboratory, an Experimental Engine-Room, and an Iron-Workshop. There are also Laboratories for Electrical Engineering and Chemistry.

Excellent provision has been made, in alliance with the Carnegie Dunfermline Trust, for the teaching of Craft work related to various trades, in which artistic form and fitness of design are to be regarded as matters of primary importance. This includes work in Metal, Wood Carving, Modelling, Enamelling, Gilding, Repoussé Work, etc.

Information and Employment Bureau.

Dunfermline has a well-organized and active Educational Information and Employment Bureau. Its purposes may be stated as follows:—

(1) To supply information with regard to the qualifications most required in the various occupations of the City and District, the rates of wages, and the conditions of employment.

(2) To give information about the technical and commercial continuation classes having relation to particular trades and industries.

(3) To advise parents regarding the occupations for which their sons and daughters are most fitted when they leave school.

(4) To keep a record of vacancies intimated by employers, and to arrange for suitable candidates having an opportunity of applying for such vacancies.

Children can now leave school only at certain fixed dates, these being in Dunfermline 1st January, 1st April, 1st August, and 15th October.

It is proposed that a record shall be kept in the Bureau containing information on the following points regarding all boys and girls who leave school:—

(1) A statement of Attendance and Behaviour.

(2) Physique, Sight, Hearing.

(3) Standard of Education attained.

(4) Fitness for particular occupations.

To facilitate this work, the School Board provides cards, of which the following copy may be taken as an example. A different colour of card is used for each different school.

DUNFERMLINE (BURGH) SCHOOL BOARD.

Educational Information and Employment Bureau.

COMMERCIAL SCHOOL.

Name of pupil..... Address.....

Date of birth..... Date of leaving School.....

Standard of Education attained.....

Attendance..... Behaviour.....

Physique..... Sight..... Hearing.....

Occupation desired (Parent to be consulted by Pupil).....

Opinion of Headmaster and Teacher as to kinds of Occupation Pupil is fitted for by natural bent and educational equipment.....

In what Evening Classes does Pupil propose to enrol, and for what Course of Instruction?.....

.....

.....*Headmaster.*

Note.—Remarks by Teacher or Headmaster should be entered on back of card. This card to be sent to School Board Office, 104 High Street.

Carnegie Dunfermline Trust.

Dunfermline is fortunate in having many educational advantages and opportunities provided or assisted by Mr. Andrew Carnegie, whose birthplace it is.

For Dunfermline proper, the *Carnegie Dunfermline Trust* practically pays 3 doctors, one dentist and 2 nurses in connection with the health work for the public schools. Two of the doctors do also some work in teaching, and in the training of teachers who are taking the courses of Physical Culture and Hygiene at the Institute. The Trust also pays the salary of the Drawing teacher who visits the several schools. Bath premises, with finely appointed conveniences, have been provided; for the use of these small fees are charged, and the Trust provides the sum of about $15,000 per annum for maintenance, above the amount received from fees. In the old bath premises, which preceded the more commodious and beautiful ones at present in use, the baths are free at certain times under regulations, and provision is made there for a free medical and dental clinic. In brief, the Carnegie Dunfermline Trust is doing exploratory and experimental work to shed light on social and educational problems, as well as to benefit immediately the children and people of the town.

College of Hygiene and Physical Training.

This institution gives a course of training extending over two years, which, in conjunction with the professional course of training in teaching provided by the Provincial Committee, prepares students to become teachers of Physical Training and Hygiene in schools. During the Session of 1909-10 the total number of students was 44, of whom 16 were men. Five men and 16 women completed the course and were awarded the diploma of the College.

Vacation Classes.

St. Andrews' Provincial Committee, in co-operation with the Fife County Committee, arrange for the further instruction of teachers by Vacation Classes held at 6 centres within the County. These provide for ordinary certificated teachers, teachers of Physical Training, Manual Instruction, Cookery, Plain Sewing and Cutting Out.

CHAPTER XVII: GALASHIELS AND HAWICK.

SECTION 1: HAWICK.

Hawick is an ancient Burgh with a present population of about 17,000 people. The chief industries are the manufacture of Scotch tweeds and woollen hosiery. A walk against the workpeople, leaving the mills at the close of the day, revealed a working population of healthy appearance, vigorous physique, neatly dressed, quiet in manner and apparently contented and happy. There was no evidence of dissipation. Men and women alike were smart and intelligent looking.

One learnt that many of the solid neat-looking houses where these people live were built through the aid of a Building Society. Numbers of these were semi-detached stone cottages costing from £350 to £400 per house. The payments necessary to enable the occupant, for whom the house was built, to own it outright had been about 6% per annum on the cost of the house for a period of 20 years or rather more. Such payments gave a member of the Building Society a full title to the house at the end of the 20 or more years. Tenement buildings had been built on a similar basis but costing less per house. Such tenement houses with kitchen, living room and bedroom could be rented for from £8 to £12 per annum.

In the newer areas of the town the houses had neat well-kept gardens in front, and the workers had garden plots for vegetables at some distance from their dwellings. There were over 400 such plots of 1-10 of an acre each. The abundance of flowers and their beauty had made this an industrial "garden city" before that name was technically appropriated by a new movement. These facts are mentioned, because some at least of the fathers of the town in conversations attributed them in large measure to the education and educational influences of the place.

Continuation Classes.

Hawick School Board provides Evening Continuation Classes for the further education of young men and women after the Elementary School has been passed. In the announcement of these classes the Clerk to the School Board says:

> Boys and girls on leaving school, soon forget much that they have learned if they do not seek to extend and at the same time fix in their minds the knowledge already gained. It is therefore especially desirable that parents should see the importance of their children attending these classes and should do everything in their power to further such attendance.
>
> The training of adolescents is now regarded as one of the most important developments in the educational system. It is at this stage that the moulding of character is effected. Much of the future prosperity of the youth depends upon the manner in which he spends these years.
>
> Increased knowledge is assuredly the best preparation for an honourable and profitable employment; and the formation of habits of study, and the consequent acquirement of higher tastes and ideals, are a safeguard against temptation to idleness and evildoing. Therefore let the youth of the town be encouraged to spend their evenings profitably at these classes, which are conducted by capable teachers in as interesting and instructive a manner as possible.

The Continuation Classes are carried on in a manner somewhat similar to those described at length at Edinburgh. Division I has preparatory courses; Divisions II and III provide specialized courses arranged in no less than 37 classes providing courses of work for (a) engineers, (b) joiners, (c) masons, (d) plumbers (e) commercial workers, (f) art students and (g) domestic occupations. The classes themselves, beginning with English, provide also for Latin, French and German and furnish systematic training for each of the groups of workers.

In conversation one of the teachers expressed the opinion that it was desirable that pupils from these Supplementary Classes should be sent or taken frequently to the more advanced technical classes held at the Hawick Technical Institute in order to interest them in the provision which exists for further education.

Successful Evening Classes.

In "Conversations" with members of the School Board it was learned that the Board relies a good deal upon the Consultative Committee in the arrangement of the classes. The attendance has grown up chiefly during the last eight or nine years since they have become more attractive by adaptation to the occupations of the young people. They are now attended by 853 individuals.

It is claimed that the evening classes, instead of exhausting the young people, have a recreational and exhilarating influence because of the different kinds of activity from those followed during the day. The development of more taste and more thinking on the part of the pupils is claimed to be an excellent result. The attendance after the classes are opened is so well maintained, after the first month, that 90% of the whole number have their fees returned by making 80% of the total possible attendances. It was observed that the attendance at the Evening Classes was about 5% of the total population of the place. That is a tribute to the wisdom of the people, the effectiveness of the administration and the capability and enthusiasm of the teachers. After learning the character and extent of the educational work done, one has no cause to wonder at the wholesome bearing of the people and the beautiful appearance of their sturdy Burgh.

HAWICK TECHNICAL INSTITUTE.

The following information was gathered from "Conversation" with Mr. William Davis, M.A., the Principal, who is also Director of Textile Technology under the Education Authorities of Carlisle and Dumfries.

The Institute was brought into existence to train operators employed in the two staple local industries, viz: woollen cloth manufacture and the production of knitted fabrics. The classes are held, from September to May, each evening from 7 to 10 p.m., and are keenly taken advantage of by the young men employed in these industries. This has been more particularly the case during the last two sessions since all departments were provided with a full equipment of practical apparatus. This has, in fact, given the cause of technical education for this district such an impetus that Mr. Davis would strongly recommend any new classes to have the apparatus installed the first session.

Generally speaking the students of any one department meet two evenings per week, one being devoted to lecture work for about one hour and the other given to practical work for about two hours. When the classes started considerable difficulty was experienced in obtaining teachers qualified so as to be recognised by the Education Department. Though practical men who had but little previous experience in teaching, or lecturers who had but little practical experience, could be obtained with comparatively little difficulty, the two accomplishments were rarely found together. The method now is to appoint a lecturer who can be recognised by the Department, and then have a practical man to take charge of the apparatus. When the classes have been in existence for some years promising students come forward, and after obtaining their diploma, qualify to act on the Staff.

For the past seven years Mr. Davis has been engaged in developing textile technical instruction in various parts of Scotland and England. For several years he went to a neighbouring district near Hawick until a young man qualified who could be left in charge of the classes. Other places were taken up in the same way and young men are now qualifying to establish such classes permanently. In three years' time all such towns will have a textile department established under their own local teachers.

Training Women Workers.

Last session the Institute took up the question of training the women workers in local industries, and introduced classes for repairing the imperfections of woven textiles. The experiments proved an unqualified success; 25 students attended two evenings per week with the utmost regularity, and showed the keenest interest and enthusiasm. As a result of this instruction the manufacturers have been able to considerably shorten the period of apprenticeship necessary to learn this branch of work. The work of this Department has attracted the attention of the neighboring towns of Galashiels and Selkirk, which are now starting similar classes in their Institutes.

Similar sections exist in connection with the knitting department, where a number of students devote their time to the structure of the various stitches of the knitted loop and learn how to repair such fabrics. The difficulty about teachers for such departments is not so great as with the other sections, for the work partakes more of a practical character, and the general supervision of a technologist is all that is needed along with practical female instructresses.

Teaching Methods are Important.

In Great Britain teachers of technical subjects at present have had little or no training in educational methods. An effort has been made to remedy this in Hawick by providing a certain link between practical technical requirements and mat weaving in the Kindergarten. By teaching the building up of fabrics first, the student is all the better able to repair the imperfections.

By conference with the teachers in the Kindergarten departments it has been brought about that the young children, in weaving with strips of coloured paper, soon learn to weave according to patterns which can be carried out on a textile loom.

In the other departments also even teachers recognized by the Government to teach Textiles do not proceed in an appointed method. This point is worthy of attention in connection with any new scheme of instruction. In fact it would be advisable to ask prospective Textile teachers to take the ordinary courses of educational method provided by the ordinary Teachers' Training Colleges.

Great stimulus is given to the work by the students preparing themselves for the London City and Guilds examinations in textile subjects, in connection with which certificates and prizes are given.

Kinds of Classes.

The Hawick Technical Institute provides specialized courses in weaving and hosiery manufacture and in cloth mending with ten classes. The names of these classes will suffice here to indicate the character of the work which is undertaken: The classes are arranged as *Wool and Worsted Weaving and Designing* for each of four years; *Frame-work Knitting and Hosiery Manufacture* for each of three years; *Cutting out and Finishing Hosiery Garments* for each of two years; *Cloth Mending*, one year.

SECTION 2: GALASHIELS.

Galashiels is another headquarters for Scotch tweeds. Here also the appearance of the workers and their homes equal the best that were seen in Germany. Both towns had every appearance of being well kept, with no evidence to an observant visitor of anything like slum life or slum quarters. Many workers own their houses. In the factories which were visited the workers seemed to be intelligent, capable and interested. On every hand one had evidence of good organization and absence of hurry-scurry. If loafing or idleness took their toll they were not obtrusive. Particularly at one mill at Selkirk, the buildings themselves and their surroundings had an appearance of solidity and beauty which in Canada one would expect only in an educational or art building. One of the proprietors said he was sure the buildings and their surroundings and appointments gave "tone" to the workmen and the work which was advantageous alike to the employer and those employed.

In addition to the usual Board Schools, with their Supplementary and Continuation Classes, Galashiels is the seat of the South of Scotland Technical College.

THE GALASHIELS TECHNICAL COLLEGE.

So far back as 1883 classes for instruction in the technique of woollen manufacturing were commenced in Galashiels, under the auspices of the Manufacturers' Corporation. In course of time the management of the classes

passed into the hands of the Burgh School Board, associated with the Deacon and Deacon elect of the Manufacturers' Corporation, while the Corporation made an annual contribution towards the expenses of the school. In recent years the success of the school has been phenomenal. The students have gained the highest distinctions in the examinations of the City and Guilds of London Institute, while their interest and enthusiasm in the ordinary work of the schoool have been great. The school had won such a high reputation that when the manufacturers and others were invited to contribute towards the new Technical College scheme, a sum of £10,120 was readily forthcoming, which, supplemented by a grant of £10,000 from the Scotch Education Department, has enabled the managers to bring the scheme to a successful issue.

The College buildings consist of a main two storey portion in the Classical Renaissance style of architecture, 161 feet long by 54 feet broad. Provision is made on the ground floor for two lecture rooms and laboratories for pattern analysis, textile testing, fibre analysis, dyeing, colour, mechanics, physics, machine drawing, with textile museum, principal's and teachers' rooms. The upper floor affords space for art, chemistry, electricity and building departments, with Board room and lecture hall. Behind the main building extends a shed of 9,000 square feet in which is placed the textile machinery of the school. The equipment consists of 60 handlooms for students' use in experimental weaving and designing; 6 power looms, warping, warp and weft winding; a set of woollen cards with the different feeds and condensers; mule; twisting frame; knitting machines, besides smaller apparatus.

The Institution was primarily intended to serve the purpose of a Woollen School for Scotland. It is devoted chiefly to instruction in the principles and practice of fancy woollen and worsted cloth manufacture; and it has evening work in other subjects such as engineering and building construction.

Surrounded as the College is by woollen manufacturing concerns of the highest reputation, it is kept in living contact with every throb of all that is best in the industry. Exceptional facilities are thus afforded of learning the business and its technique under thoroughly practical conditions.

No effort is made to train operatives to become more dexterous. That is not required, because ample facilities are afforded in the mills. The influence of the College and the classes is directed towards the development of good character. Students are made to feel that they are part of an honourable institution with a reputation which must not be lowered by any unworthy conduct on their part.

The governing body consists of five members of the School Board at Galashiels, three manufacturers and one sculptor.

The income in 1910-11 was derived from Government grant, £1061; fees, £122; local rate, £410. There are five departments: (1) A Woollen Manufacturing Course with an attendance of 12 full day pupils, 10 part time day pupils and 130 evening pupils; with 40 pupils in Cloth Mending. Of the 150 ordinary evening pupils about 100 aim to be designers or hold some position which requires a knowledge of designing. (2) A Dye and Chemistry Department with 25, mostly evening students; (3) Engineering 50 students, all in evening

classes. The day occupations of these students are as draftsmen, fitters, turners, pattern makers, blacksmiths, moulders, and they are chiefly apprentices at those trades; (4) Building Construction Department with 40 to 45 students mostly joiners with some plumbers and building clerks; (5) A School of Art with 50 to 60 pupils. The total attendance is about 350 individuals.

The Director had 12 years' experience in woollen mills and was then selected as Evening Technical Lecturer. He had previously been an evening school student in Science, Art and Technology. In spare time during the day, while conducting evening teaching, he studied first for London University B.Sc., then Edinburgh B.Sc. Engineering, and D.Sc. Physics.

The staff have been selected by the Director from among a number of students by personal observation of qualities. The men have proved satisfactory. The teachers are all craftsmen, and their theoretical qualities are attested by City and Guilds of London Institute certificates in their several subjects.

The Head Art Master is an A.R.C.A. London. The other members hold, as a rule, first class honors (City and Guilds). The Engineering lecturer is a Whitworth Exhibitioner and Medallist in University and City and Guilds, South Kensington, etc., subjects.

The teachers are obtained from the most intelligent workers in the factories who have been students in the Evening Classes. These act first as demonstrators and then as assistants. When they become assistants they receive 5s. 6d. per hour.

The Principal receives more private applications for ex-students as designers, etc., than he can properly meet, and has frequently to recommend men who have not been students. Ex-students have been sent this year to Russia, France, Ireland, Yorkshire and various parts of Scotland.

CONVERSATION WITH DR. THOMAS OLIVER.

Information as follows was gathered in "Conversation" with Dr. Thomas Oliver, the Principal.

In the old days of the industry, when manual dexterity was the prime factor, the needs of the trade were met by the apprenticeship system, fostered by the Trade Guilds. This system of trade instruction aimed at making every unit in the industrial army equally efficient at the same work. Since practically every man in the trade was a weaver, nothing was to be gained by making one weaver better than another. The modern revolutions in the industry, brought about by mechanical invention, have also imposed a division of labor which fifty years ago would not have been entertained. The efforts of every worker are so restricted to part of the process of manufacture that he has no opportunity of becoming acquainted with the remainder of the process. Thus the value of the average individual decreases. The more a machine approaches to the automaton the less important the machine attendant becomes, and the more efficient must the 'overlooker' be.

Last year Dr. Oliver tried, in accordance with Departmental instructions, to make a course of Elementary Physics, Mechanics and Mathematics interesting to first year weaving students. On the third night he had a deputation waiting on him to try and get something more useful and agreeable substituted. "What's the use of these things to me? I am going to be a pattern weaver"—was the sum of the young person's wisdom.

German Progress in Woollens.

The Germans try to develop the innate artistic and scientific faculties in their young men. Wherever work requires brains, and brains are invested in the work, the product of these brains will appear in the long run. "At the present time" said Dr. Oliver, "our continental rivals are far behind in the matter of style in the production of fancy woollens. Fifty years ago they were far behind us in industries from which they have now completely ousted us. Now, I am confident that when the Germans put as much brain power into the manufacture of fancy woollens as they have put into the dyeing industry, into the electrical industry, and into the application of optics, they will succeed equally as well. It will lie with us to see that we are not pushed out of the market by superior products."

Education Made Applicable.

"A new spirit is suffusing minds in the woollen industry. The most conspicuous evidence of the fact is shown in the erection of this College. Ten years ago we would have deemed such an expenditure a ridiculous waste of money. But education is less costly than ignorance. An outlay which promotes the intelligence and the industrial efficiency of the community is well spent. Many and varied are the causes assigned for industrial depression. Good times make employers and employed wasteful and careless. The Peruvian silver mines were the cause of the downfall of Spain. The excessive pursuit of the various forms of sport, the enormous drink traffic, lower wages and longer hours of foreign workers, the edicts of Trades Unions, the tariff walls of other nations, are all advanced as causes, and are undoubtedly prime factors in the decline of many of our industries. But one which is too often ignored is that we are deficient in the knowledge of our business. We have been playing at technical education for thirty years.

"Technical education is not magic nor jugglery; it is merely common sense organized. I am not one of those people who assert that education is the prescription that will cure all ills. The technical education of thirty years ago, although meeting a great need at the time, has been in measure found wanting. It took insufficient account of the diversity of modern industry. Moreover, there has been no effective system in operation which ensures that the right kind of student will receive instruction. The instruction has been too pedantic, too much dominated by the atmosphere of the University. This is more evident

in engineering than in textiles. Every Technical College prospectus in the country has had engineering on the same model, viz., the University course. The young student struggled through his University career, secured a post as a technical teacher, and promptly commenced to inflict a miniature University Course on his students, forgetful of the fact that none of his students were going to be teachers. They hope to be foremen of turning, fitting, pattern making shops and so on."

IRELAND.

CHAPTER XVIII: OUTLINE OF THE EDUCATIONAL SYSTEM.

INTRODUCTORY.

Ireland has a total area of 32,605 square miles, 945 of which are water and 1,800 bog land. In round figures it contains 20,000,000 acres of land, about three quarters of which is classed as cultivable. Ireland is bounded on the North, West and South by the Atlantic Ocean and on the East by the St. George's Channel and the Irish Sea. The distance from the coast of Wales is about 50 miles and from that of Scotland thirteen and a half miles.

The climate is somewhat warmer than that of England, the mean annual temperature being about 50 deg. F. The atmosphere is more humid than that of England or Scotland and this, with the frequency and uncertainty of rainfall in the summer, has a retarding influence on the ripening and saving of the grain crops.

The population for 1911 was estimated at 4, 381,951, showing a decrease of 1·7 % within the previous ten years. The decreases in the decennial periods are becoming smaller. The decrease in population from 1881 to 1891 was 9% and from 1891 to 1901 was 5·2%. The emigration to the United States is largest. In 1911 the numbers who went to the United States were 36,616; to Canada, 6,807; to Australasia, 3,554; to British South Africa, 996; to other places, 1,318. Between 1851 and 1910 over 4,187,000 persons emigrated.

Occupations of the People.

According to the census of 1901 the occupations employing the largest number of persons were as follows:—

General or local government	34,281
Professional occupations	55,175
Agriculture	859,525
Fishing	10,434
In and about mines, quarries, etc	6,512
Workers and dealers in clothing	141,588
Textile fabrics	110,208
Building and works of construction	60,977
Metals, machines, etc	41,179
Paper, printing, books and stationery	11,563
Wood, furniture, fitting, etc	11,040
Skins, leather, etc	4,267
Precious metals, jewels, etc	3,148
Chemicals, oils, soap, etc	2,896
Gas, water and sanitary services	1,715

Brick, cement, pottery	1,381
Domestic offices or services, excluding domestic outdoor service.	202,238
Providing food, lodging, etc	75,148
Transportation	71,255
Commercial occupations	39,323
Other general and undefined workers	177,516
Total number occupied	1,949,607

SECTION 1: THE NATIONAL SCHOOLS.*

The object of the Irish National Schools is to afford to children of parents of all religious persuasions, under safeguards and regulations which secure the fundamental principle of non-interference with different faiths, (1) literary and moral instruction given in common to all scholars; and (2) separate religious instruction to those of different faiths without interference with secular education. No child can be excluded, either directly or indirectly, from attending any National School by reason of religion or social position, and no school for any select class of children is recognized as a National School.

The main basis on which the development of Primary Education in Ireland is organized is the granting of aid by the Commissioners of National Education (subject to general principles as above) to local patrons and local managers of National Schools. This aid takes the form of grants and loans for building and repairing school houses and teachers' residences; grants of salary for teaching staffs; and free grants (or supplies at reduced rates) of books, maps and requisites for the use of schools, teachers and pupils.

Two Classes of Schools.

Ordinary National Schools consist of two great classes:—(1) "Vested" schools are such as have been built by the aid of grants from the National Board (two-thirds of the estimated cost of building, furnishing and enclosing the schoolhouse, the remaining third being provided locally) and secured for educational purposes by leases to the Commissioners themselves or to Trustees, in the latter case the Commissioners also being parties to the leases; (2) "Non-vested" schools are such as have not been built by aid from the National Board or secured to them by lease. Convent or Monastery Schools may be either Vested or Non-vested.

System of Management.

Both the above classes of schools are directly under the patronage of some person or persons. If the school is vested in the Commissioners, the name of the patron (who is generally the grantor of the site of the school) is inserted in the lease, and if the school is vested in Trustees the latter are recognized as the patron. If the school is non-vested the patron is usually the person who applies

* The material for this summary was obtained from the memorandum by The Right Hon. C. T. Redington, D.L., Commissioner of National Education in Ireland, in "Special Reports on Educational Subjects" issued by the Education Department, London, Eng., 1896-7.

to the Board for aid in the first instance; but if a local committee is managing the school then the committee is the patron. The patrons have the right of managing the schools themselves or of nominating as local managers fit persons, such as clergymen or other persons of good position living in the vicinity; and these are charged with the direct government of the schools, and must undertake to visit them frequently and see that the regulations of the National Board are complied with. The Commissioners reserve the right to refuse to recognize any patron or manager, or to withdraw their recognition of such after investigation. The local managers, subject to the approval of the Commissioners, appoint the principal teachers, assistant teachers, work-mistresses, etc., but the Commissioners appoint the "monitors" from among the best pupils of the National Schools, on the recommendation of the District Inspectors. The local managers have the right to dispense with the services of any member of the teaching staff, and the Commissioners also reserve the right of refusing to recognize or to continue the recognition of any member of the teaching staff, and of fining, dismissing, reprimanding or otherwise punishing any teacher or monitor when necessary.

Great interest is taken in the conduct of the schools by the local managers, of whom there are about 3,000, including clergymen and laymen of Christian denominations as well as some Jews.

Curriculum.

The Commissioners have made the following subjects compulsory in all schools:—reading, writing, arithmetic, spelling, grammar, geography, together with agriculture in rural schools for boys and needlework in all girls' schools. The following extra subjects are taught in addition to drawing and music:—Classics, French, Irish, German, instrumental music, physical science, chemistry, hygiene, geometry, agriculture, dressmaking and other industrial branches.

Many National Schools have private endowments, and schools of this class have been included in endowment schemes formulated under the Educational Endowments (Ireland) Act of 1885; and the Commissioners in some instances have representatives on their Governing Boards. Under the operation of the Irish Education Act of 1892 most of the National Schools have become free, and when the compulsory attendance clauses of that Act fully operate it is expected that the attendance will be largely increased.

Teachers and Grants.

Many National Schools are recognized in connection with convents and monasteries, and in some of them the teachers, though members of religious communities, are "classed," and the schools conducted and the teachers paid precisely in the same way as the ordinary National Schools. In the case of such schools where the teachers are not classed, and consequently not paid the class salaries, the conductors of such schools receive a "merit capitation grant" of 10s. or 12s. per annum per pupil on the average daily attendance, according

to the proficiency of the pupils generally as reported by the Inspector. These unclassed convent and monastery schools are dealt with as ordinary National Schools, the essential difference between them and the latter being that the teachers of ordinary National Schools are lay persons. The Commissioners recognize lay persons as industrial teachers in Convent Schools, and pay them fixed salaries, but do not pay "lay" persons who assist in ordinary instruction in Convents though such must be "classed" teachers.

The training of National teachers is provided for in five training colleges. Three of these are Roman Catholic (two for males and one for females), one is Protestant (for both sexes) and one, entirely controlled by the Commissioners (the Marlborough Street College) is undenominational for both sexes. At these colleges nearly 800 students attend annually.

Training Colleges.

Each college has two courses: (1) for National teachers already "classed" who have actual charge of schools but who employ substitutes during their absence for one session at college; (2) for "classed" teachers who have not charge of schools; also for pupil teachers, monitors and other suitable candidates. This course covers two sessions. These students are granted diplomas of training after completing their courses and two years' satisfactory service in National Schools. The college authorities are paid £50 per annum for each male teacher trained and £35 for each female teacher trained, besides diploma bonuses of £10 and £7 respectively.

Professors and staffs of the Denominational Colleges are appointed by their managers subject to the general approval of the National Board.

Practising National Schools are attached to each college and the teachers in these schools have special privileges as regards salaries.

Since 1879, teachers may receive pensions after retirement at the age of 55 for males and 50 for females, three-fourths of the benefits being provided from the Government endowment, the remaining fourth being contributed by the teachers.

Teachers under the Irish National system must be qualified as being persons whose attainments have been tested by examination, or as members of religious communities of men and women devoted to teaching. Where "class" or special salaries are claimed the school attendance must be sufficiently numerous to warrant such payment, an average daily attendance of 20 pupils being required. Special arrangements are made in cases of small schools on islands.

Teachers of ordinary National Schools receive in addition to salaries, "results fees" according to the answering of their pupils at the annual "results examination"; capitation payments from the local taxation (excise and customs) grant of £78,000 per annum; payments out of the grant for free education under the Irish Education Act of 1892; gratuities for training monitors; and premiums from certain local contribution funds. Workmistresses are not classed as teachers; they are paid an annual salary of £12 and get a share of the results fees. Industrial teachers are usually paid a salary of £24 per annum, and do not receive results fees.

Inspection.

The country is divided into 66 districts, each having an inspector in charge. The 6 head inspectors exercise general supervision over the district inspectors and their assistants and also have actual inspection of a number of schools.

Each National School is examined yearly for results, and the inspector's report covers the marks obtained in each subject by each pupil examined, the class in which the child was previously examined, how long enrolled in the class in which he was last examined, etc. The inspector also carefully examines the school accounts and verifies the number of attendances of each child. No results payments can be sanctioned for any child who has made less than 100 attendances in the results year.

In Ireland the schools meet only once each day for four hours' secular instruction, and a child must be present before the rolls are called to warrant his attendance counting for "results" purposes. In National Schools situated in Poor Law Unions, which are "contributory" under the Act of 1875, the Guardians pay the teachers 50% additional to the results fees earned, but in such cases the Guardians and not the teachers receive the share of the customs and excise grant aforesaid.

Model School Departments.

Besides the ordinary National Schools there are Model School Departments in towns and townships, these schools being owned, controlled and directly managed by the Commissioners. The teachers are usually selected by competitive examination, the Headmasters being provided in most cases with residences or cash allowances in lieu of them, and additional special payments are available for such masters and mistresses under certain contingencies. Monitors are employed in Model Schools under the same conditions and at the same rates of pay as in ordinary National Schools. In addition to monitors, Pupil-teachers (who must be at least 16 and not over 20 years of age) are appointed for only one year on the recommendation of the head and district inspectors after examination, but may be continued for a second year; they are not recognized in any except Model Schools. At the end of their first year of service, they may, after passing a satisfactory examination, be placed in the lowest grade of "classed" teachers, and after a second year's service may be promoted to the first division of that class on the same conditions. These pupil teachers get free grants of books on first appointment, are paid £26 per annum, with gratuities, and if retained a second year receive a small quarterly salary.

Evening Schools.

Evening schools are recognized in connection with Model, Convent, Monastery and ordinary National Schools. Teachers of evening schools in connection with Model Schools are paid special rates of salary; in connection with Convents and Monasteries £10 per annum is allowed for every 100 pupils

in average attendance; teachers of other evening schools receive £1 per month while the school is open. Teachers of all evening schools are entitled also to results fees, but receive no benefit under the Act of 1892. Evening schools must be open three evenings weekly for two hours each evening, and will not be examined for results unless in operation for six continuous months.

SECTION 2: DAY SECONDARY SCHOOLS.

In "Conversations" with Mr. T. P. Gill and Mr. George Fletcher the Commission gathered information concerning Day Secondary Schools which are under the Intermediate Board of Commissioners. The following are some of the main points so gathered; others are dealt with in Chapter XX—"Conversation with Mr. George Fletcher."

As to the Day Secondary Schools being dealt with directly by the Department, Mr. Gill said it might be interesting from the point of view of some Canadian circumstances to state that all the Secondary Schools in Ireland, without exception, are voluntary schools, and none of them were created by the State or the Local Authority. Nearly all have been in existence for many, many years, some with foundations, some with none, but all without exception receiving State grants either from the Intermediate Board or from the Department.

The principle adopted in administering the grants from the Department of Agriculture and Technical Instruction leaves it free to disregard everything concerning these schools except the efficiency of the teaching of the particular programme for which the Department paid the grants. For example, the Department would go into a school like St. Andrew's College, which is Presbyterian, or Mount Joy Church of Ireland School, or a school maintained by the Free Mason body, or the Catholic Schools conducted by the Christian Brothers, or the Convents. It was a matter of no concern to the Department what religion, if any, those schools taught provided they taught the Department's programme (Experimental Science, Drawing, Manual Instruction, Domestic Economy) in an adequate manner, gave a proper amount of time to it, employed in the teaching of it teachers adequately qualified, and also permitted the most complete inspection by the Department. If those conditions were fulfilled, and the Department's inspection at the end of the year revealed that the schools had given adequate time to the programme and taught it well, then the grant would be paid.

There are no Secondary Schools that receive Municipal assistance; they are all private schools. The Department grant does not form a very substantial part of their expenses, but they also get grants from the Intermediate Board, which administers grants for Secondary Education in the schools. The programme of that Board has been co-ordinated with that of the Department; so that they fit in.

Grants for Secondary Education.

The total grant from the Department and the Intermediate Board together would be about £4: 10s. per pupil, hence it would be impossible to furnish any-

thing like the excellent system of Secondary Education in Ireland but for the fact that a very large number of these schools are provided by religious orders and have voluntary teaching, the salaries not cutting much figure. The cost of a Secondary Day School pupil in Ireland generally might be put at from £14 to £18, and the Government grants did not amount to nearly half that. If the Department of Agriculture and Technical Instruction went on the plan of saying that it wanted a particular type of school that would fulfil this or that condition, and that it would not give grants to any other schools, it would start out handicapped with a very costly programme. On the other hand if the Department said it wanted a certain programme taught and certain results accomplished by the schools, and that if it received them it would pay for them, that plan would secure what were considered most valuable conditions—minimum cost and maximum results.

SECTION 3: AGRICULTURE, INDUSTRIES AND TECHNICAL INSTRUCTION.

The watchwords of the movement for progress in Ireland, through the improvement and extension of Agricultural, Industrial and Housekeeping Education, are imperishably connected with the name of Sir Horace Plunkett: "Better Farming; Better Business; Better Living."

The recent developments had their immediate origin in the Report of what is known as the Recess Committee. That Committee was formed on the invitation which Mr. (now Sir) Horace Plunkett issued in August 1895 to a number of Members of Parliament and other Irishmen of various political opinions, to meet for the discussion of any measures for the good of Ireland about which all parties might be found in agreement.

Recess Committee's Work.

The Recess Committee evidently did its work in a thorough-going manner. Its Report, which was issued in August 1896, recites what the Committee undertook to do.

(1) It first devoted its attention to the existing economic condition of Ireland, and sought to trace its industrial shortcomings and commercial disabilities to their more direct causes.

(2) It next reviewed the immediately available resources of the country, and considered the possiblites of their development.

(3) It then caused enquiries to be made in those European countries whose experience in the improvement of their agricultural and industrial condition might guide those interested in the material progress of Ireland. For that purpose it sent special Commissioners to the following countries:—France, Belgium, Holland, Denmark, Bavaria, Württemberg, Austria, Hungary and Switzerland.

(4) The Committee endeavoured to utilize foreign experience in making suggestions for the promotion of agriculture and industries in Ireland.

Referring to the various countries in which enquiries and investigation had been made, the Report states:—

> Various though the circumstances of these different countries are, it is a striking fact that we find the same main principles adopted by them all in promoting agriculture. The three great principles, which are common to all, may be summed up in three words: Organization, Representation, Education. That is to say: organization of the agricultural classes themselves in societies, clubs, or corporate bodies for the advancement of the various branches of their industry; representation of the opinion of the farming classes in the administration of State aid by Government Departments; and education of the farming classes, both adults and children, in all technical knowledge appertaining to their industry.

The Committee also reported that they found decentralization, the free play of local individuality, and direct relationship with local industries to be the keynotes of artistic and technical training throughout the Continent.

The general conclusion arrived at by the Committee was:—

(1) That the administration of State aid to industries in Ireland, on the principles to be described, can be most effectively carried out by including the two branches of Agriculture and Industries, and the Technical Instruction relating thereto, under the care of one Department of the Government specially created for the purpose;

(2) That this Department should consist of a Board with a Minister of Agriculture and Industries responsible to Parliament at its head, and a Consultative Council representative of the agricultural and industrial interests of the country.

As the result of these enquiries and investigations, the Chairman of the Committee, in a letter to then Chief Secretary to the Lord Lieutenant of Ireland (The Rt. Hon. Gerald W. Balfour, M.P), said, "While we do not anticipate an immediate fulfilment of all the possibilities we indicate, we are confident that rapid progress on the lines suggested is within the bounds of practical attainment."

Lessons for Canada.

The conditions which existed in Ireland in 1896 were in many respects so much like those in Canada in respect to training for Agriculture and Industries, that an extended and reasonably full statement is given of the organization and work of the Department of Agriculture and Technical Instruction which was created as the result of the report of the Recess Committee. A further reason lies in the fact that the current and intimate knowledge, gained by practical experience, enables the Department to judge how far the system which was inaugurated and the methods which have been followed are appropriate and efficacious.

Our Report is limited to the main features of the work which is directly educational.

The Department issued its first Annual Report in 1899-1900. After 10 years of experience, some modifications in the methods of administration have been made, extensions have been added, but on the whole, the organization, system and methods then adopted have proven themselves well adapted to meet the situation. On all sides one finds testimony, through his eyes and ears,

to the happy results, of a regeneration of agriculture and of a revived interest in and preparation for industries, which are being accomplished by the joint work of the Department, Local Bodies and individuals.

The members of the Recess Committee rendered such an illustrious and lasting service to the cause of agricultural and industrial education in English-speaking countries, that the Commission takes the liberty of recording their names in this Report, and of paying its tribute to their work: they served their own nation well, and have enabled Ireland to contribute to the progress of civilization with increasing advantage to itself and marked benefit to other countries.

MEMBERS OF THE RECESS COMMITTEE.

Chairman—Hon. Horace Plunkett, M.P.

The Earl of Mayo.
The Lord Monteagle, K.P.
Rt. Hon. The Lord Mayor of Dublin.
Rt. Hon. The O'Conor Don, H.M.L.
Rt. Hon. Joseph M. Meade, LL.D.
Rt. Hon. Thomas Sinclair, D.L.
Sir John Arnott, Bart., D.L.
Sir Thomas Lea, Bart., M.P.
John Redmond, M.P.
John H. Parnell, M.P.
Richard M. Dane, Q.C., M.P.
William Field, M.P.
Hon. Mr. Justice Ross.
Right Rev. Monsignor Molloy, D.D.
Thomas Andrews.
Valentine B. Dillon.
C. Litton Falkiner.
Rev. T. A. Finlay, S.J., F.R.U.I.
Thomas P. Gill.
Joseph E. Kenny, M.D.
H. Brougham Leech, LL.D.
Count Moore, D.L.

ULSTER CONSULTATIVE COMMITTEE.

Chairman—James Musgrave, D.L.

Thomas Andrews.
James Dempsey.
Sir Daniel Dixon, Knt., D.L.
Sir W. Q. Ewart, Bart., D.L.
John Fagan.
Maurice Fitzgerald (Professor Queen's College, Belfast).
Rev. R. R. Kane, D.D.
Robert MacGeagh, J.P.
R. J. McConnell, J.P.
Alex. Robb.
Thomas Roe, J.P.
Rt. Hon. Thomas Sinclair, D.L.
John F. Small.

SESSIONAL PAPER No. 191d

CHAPTER XIX: CONVERSATION WITH MR. T. P. GILL.

Information obtained from "Conversation" with Mr. T. P. Gill, *Secretary of the Department of Agriculture and Technical Instruction for Ireland.*

The object and scope of this department may be quoted from the opening paragraph of the pamphlet, "Organization and Policy of the Department," as follows:—

> The purpose of the Agriculture and Technical Instruction Act, 1899, is to establish an Irish Department of State, so constituted as to be representative at once of the Crown, the recently created local government bodies of the country, and those classes of the people with whom its work is chiefly concerned; and to give to this Authority the function of aiding, improving, and developing the agriculture, fisheries, and other industries of Ireland, in so far as may be proper to such a Department, and in such manner as to stimulate and strengthen the self-reliance of the people.

The Department represents a number of branches heretofore existing that had in various ways relations with agriculture or administration of some department, and included the Veterinary Department, also the functions of the Registrar-General and the Land Commission related to agricultural statistics; also the administration of sundry other Acts. It included also the functions of the Board of Education, South Kensington, (London), in relation to the administration of the Science and Art grant, the grant in aid of technical instruction, and the Science and Art institutions in Ireland; also those of the Board of National Education in connection with the Albert Institution and Munster Institution. It is important to realize that these were scattered elements of administration, staffs and endowments that were in existence and that were brought together under common direction and with a common co-ordinate idea, which is thus stated:

> The organization of the Department has been carried out, so far as it has gone, in careful observance of the fact that there is an essential unity of purpose behind its various functions, whether these directly concern the development of agriculture and industries, the promotion of technical instruction, the collection and publication of information, or the administration of laws to prevent the spread of contagious diseases amongst cattle and other live stock, and fraud in the sale of agricultural requirements and produce.

Funds Available and How Applied.

The various funds at present available were made up of votes of Parliament in connection with the branches of administration taken over when the Department was constituted, and in addition a special endowment fund, to be administered by the Department for its new work. There was first the grant due to the country under the heading of Local Taxation, Customs and Excise, amounting to £78,000; another, called the Irish Church Temporalities Fund, consisting of a surplus remaining after the disestablishment of the Irish Church, amounting

to £70,000; a third fund, amounting to £12,000, came from economies made in legal administration when certain judgeships were abolished, and the salaries attached thereto were offered to the Department. Then there was the money annually spent on the institutions at Glasnevin and Munster, £6,000; these funds making together £166,000 per annum, which is an annual grant. Since then the Department gets, under the Congested District Boards Act, a special fund of £19,000 additional. These moneys are called the Department's Endowment Fund, and every three years it is divided into two sections—£55,000 going for Technical Education, as distinct from Agricultural Instruction, and £10,000 being set aside for Sea Fisheries. A few other small items need not be mentioned. The remainder is given to all the purposes of agriculture, including improvement of live stock and schemes for agricultural education and development generally. The £55,000 for Technical Education is every three years divided into sections again, one going to the large cities and county boroughs, and the remainder to the small towns and the balance of the country.

The Department receives from the Imperial Exchequer two other sums,—one of £5,000 under the Act of 1902 and the other of £7,000 from the Development Fund.

The Department has two Boards, one for Agriculture generally, and the other for Technical Education; the former administers everything that the other does not, and also deals with Fisheries. The Agricultural Board has voted an additional sum of £9,000 from its funds to be applied by the Board to technical instruction in rural districts.

The item for training teachers in Nature Study in rural schools comes from the sum the Department keeps for central purposes, to be used for the whole country and not for a given district. Teachers come from different parts and go to different parts of the country, and their training is considered one of those central purposes and paid for in that way. For Summer Courses for other teachers, whether for town or rural districts, to teach Science in Secondary Schools, a part of the Parliamentary grant is obtained through the Treasury. There are thus, it is to be noted, different sources from which funds are got.

Science and Art Regulations.

One additional main item is the administration of the old Science and Art grant from South Kensington that was applicable to Ireland the same as to the rest of the United Kingdom when this Department came into existence, but which had been very poorly utilized in Ireland. One reason for this was that the regulations were not suitable to Irish conditions; another, the competition of the Intermediate system. When the Department started, the full amount utilized for the teaching of Science and Art was £4,000. In consultation with the teachers, and using the knowledge that some of the leaders possessed of the circumstances of the country, the Department got the Treasury to agree to a new set of regulations more suited to the conditions of Ireland, and the result is that for the teaching of science and art in the secondary schools the sum earned has increased in 10 years from £4,000 to about £28,000. This is provided from the Treasury at London, and is separate from the Endowment Fund.

The South Kensington fund is allocated according to regulations which lay down conditions under which it is to be earned. This Department has to approve of the programme adopted by the school, to inspect the teaching of that programme, and to satisfy themselves that the teachers possess the qualifications laid down by the Department, then certify that the school has earned the grant which comes through the hands of the Department. The Treasury will not pay the money to the school except on the authority of the Department.

The Royal College of Science, the Metropolitan School of Art, the National Library of Ireland and the National Museum and Royal Botanic Gardens at Glasnevin were formerly administered from South Kensington, but have come over to the Department, and with them the grant that maintained them. At that time the grant was about £32,000 in all but it has been increased since. The Department appointed a Committee to study and report as to the future of the College of Science, and on its recommendations the College was reorganized and a new building has been provided by the Imperial Treasury involving additional money.

Another set of regulations were made available for the Evening Technical Schools, and they were so suitable that nearly every one of those schools is now able to avail itself of these grants, which have grown from a very small figure up to £27,000. In round figures the whole scheme now comes to £55,000 from the Imperial Treasury, apart from the Department's Funds.

School Garden Work.

Great pressure has been put on the Department from various people in the country to have the Horticultural instructors, who are teaching the cottagers how to improve their holdings, put into the work of teaching garden work to elementary school children. This the Department could not do, but they had undertaken to train the National teachers for the purpose by short courses.

The Endowment Fund —that is, the Department's Funds—is administered with the assistance of the two Boards mentioned, but the Department itself has organized its work on a plan intended to give effect to the principle already quoted—that of essential unity amongst all its functions. The aim has been to have a series of branches, each manned by a qualified staff, and in a position to concentrate its entire energy and expert skill upon its special task as if it were a distinct department in itself, while at the same time its work is brought into harmony with the general purpose of the Act and gains from having behind it the resources of the entire Department.

Branches of the Department.

The machinery for the general direction and co-ordination of the branches is provided by the officers, Vice-President and Permanent Secretary. The branches are:—

(1) Agriculture—dealing with the whole field of agricultural administration, including Agricultural Education;

(2) Technical Instruction, administering the specific endowment for Technical Instruction, the Science and Art branch of the Secondary Schools, and evening technical schools:

(3) Fisheries Branch, dealing with the Fisheries;

(4) Statistics and Intelligence Branch, dealing with a very elaborate system of statistical information, and acting also as the Intelligence Department. Through this branch the Department is in communication with practically every Government Department in the world like their own, with every department of Technical Instruction and of Agriculture. It receives not only their publications, but those of the press of various countries relating to their work and has a system by which a synopsis of anything that may be new in information, that comes in from the whole world, is circulated amongst the branches every month, and sometimes every week, so that every branch is kept in touch with what is going on all over the world in connection with its work;

(5) Veterinary Branch, which deals with administration in connection with diseases of animals;

(6) The Grants Branch, which is the Treasury Department.

Broad Principles of Administration.

The first of the broad principles on which the Act is administered is to secure an effective *modus operandi* by which both local initiative and central contribution will have every opportunity. All the agricultural and technical instruction work of a local nature is administered through Committees of the Local Authority which are called into existence by the Act. In the Counties they are Committees of the County Council; in the towns Committees of the Municipal Council, expressly formed under the Act for that purpose. The County Committees administer all the live stock schemes and local agricultural instruction, and the city Committees administer all the technical instruction schemes. The local authorities raise rates for the promotion of this work, and unless they do so, they are not entitled to receive any grants from the Department. When they raise a rate and submit a scheme that the Department approves, a grant is made for it, and the local authorities administer the scheme subject to the inspection of the Department, which practically fixes the standard. The Department lays down qualifications of various types of teachers, and will not approve of any being employed who have not these qualifications. This is one of the most important principles to be noted in the working of the Act. Great pressure is nearly always brought to bear on the Department to allow a teacher to be employed who has not quite obtained the qualifications required, but the Department has always refused, except in most *bona fide* exceptional circumstances.

This is the only safe principle in the end, because the teaching must be absolutely right.

Local Rates and Department Grants.

The local authorities are asked to raise a certain amount of money before they get the Department's grant. Some districts are poorer than others, but the Department says that they must raise such a rate as in the circumstances of their locality they should raise. For example, a penny rate in the County of Mayo would not raise anything like what a farthing rate would in a district in part of the County of Down, It is that poor district that is most in need of grants; so that where a poor district does its duty, although the total amount raised may be a small one, the grant is given, and given at a higher rate to a poorer district than to a richer one. Pound for pound may be given in one case, and thirty shillings to the pound in the other. The proportions are modified in that way.

The idea is to stimulate local initiative and sense of local responsibility as much as possible, while conserving the equally necessary principle of central suggestion and supervision. There must be a body which is able to look at the question from the point of view of the whole country; a body which has experience of what is going on in the country itself as well as outside—which no local body can have. It is most important to conserve the effectiveness of action of that body. Various movements of opinion come into the plan to destroy that effectiveness, because the control of a central body is always irksome to a local body that does not quite agree. While all those difficulties were met in the beginning, the local authorities throughout the country have now come to realize that the Department has generally good reason for what it recommends and decides. The upshot is that local authorities invite the Department's interference and guidance again and again. That remark applies to schools looking for the advice of the Department's inspectors as well as to local authorities, who constantly ask that an inspector be present at the meeting when they are settling their schemes for the year.

Direct and Indirect Means.

Another principle has been to distinguish between direct and indirect means of action in promoting agriculture and industries. The direct means include all that relates to the improvement of live stock on the agricultural side; to exploitation of Irish products in the market; and to assistance to industries on the technical instruction side. The main indirect means of action is education—the instrument that the Department regards as most potent of all.

One principle of the Department's educational policy is that although administering a specific branch of education, the Department does not look upon that apart from the education of the country as a whole, which must be considered as an organic unity.

The other fundamental principle is to consider the pupil with regard to the formation of the all-round man, and not merely to give to specific technical aptitudes. Experience has shown—and of nothing was Mr. Gill more firmly convinced than this from his own experience—that even for making a man

efficient in a purely technical calling, the more that broad human preparation of the man was regarded, the better would the technical work be done. The effort must be to make a man of him, and not merely a machine. The following passage occurs in the very first statement of the Department's policy:—

> The Department do not desire that Ireland, at this period of transition in her educational history, should fall into the mistake, which, it is beginning to be recognized, has been committed elsewhere, of underestimating the value of the human and ethical parts of education even in the direct production of utilitarian results.

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CHAPTER XX: CONVERSATION WITH MR. GEORGE FLETCHER.

Information obtained from "Conversation" with Mr. George Fletcher, *Assistant Secretary in respect of Technical Instruction, Department of Agriculture and Technical Instruction for Ireland.*

This Branch of the Department is concerned with the following operations:—(1) Secondary Schools; (2) technical schemes in various urban centres and rural districts; (3) Central Institutions; (4) the policy in regard to industrial development.

When the Technical Instruction Act of 1899 was passed there was transferred to this Department the administration of the grant for Science and Art in Ireland, and also the administration of the grant-in-aid of technical instruction as defined by that Act. The South Kensington authorities had made grants to Secondary Schools in Ireland before this Department came into existence. The Department inherited that power and right, and has exercised it to the full, and while it worked under the South Kensington regulations for several years, it was found that those regulations, unsuitable for Scotland and England, were still more so for Ireland; hence no time was lost in altering them.

The Department, recognizing that all Technical Education must be based on sound Primary and Secondary Education, endeavoured as one of their first steps in Technical Education, to reform the teaching of Science in the Secondary Schools of Ireland. An extremely small amount of science teaching was being done in the Secondary Schools when the Department established its programme. There was a programme of natural philosophy which did not involve any practical work whatever. It was tested solely by examination, and the number of students in the whole of Ireland had fallen down to something like 600—a desperate condition of things when it is realized that there are very nearly 300 Secondary Schools.

Science Teaching in Secondary Schools.

The Department had a fairly clear course, because they had the power to make grants for the teaching of science in Secondary Schools; therefore they established a programme which has some very interesting fundamental principles. First of all the Department said to schools, "We can make grants to you for the teaching of experimental science, but we require that the teaching shall be very practical in character, and that practical work shall be done by the scholars themselves. Mere demonstrations are insufficient. Therefore we cannot recognize a school which has not a fairly equipped laboratory for the teaching of science. Next, we require that teachers shall be trained to carry

out this course, which shall be for four years. The first and second years, called the preliminary course, shall be quite fundamental in character, shall impress the elementary principles of physics, and must be taught practically. For the third and fourth years you may choose among the specialized subjects:—physics, chemistry, mechanics, botany, or domestic economy for girls, drawing, or physiology or hygiene."

The main difficulty at the very outset was that there were not in the whole of Ireland six laboratories in the Secondary Schools, neither had they the teachers. But the body that made the conditions gave the aid to meet them. On representations made to the Treasury a full grant was made for equipment for Science Laboratories—£5,000 a year for 5 years, or a total of £25,000. The Department also sanctioned County Council Committees making grants for this purpose out of the funds which had accumulated during practical'y the whole of the first year, before the schemes had been able to mature; so that all told there was probably £50,000 given to assist in equipping the Secondary Schools. The local authorities certainly gave as much more, because they had to provide buildings.

How Teachers were Trained.

The difficulty of teachers then appeared. Teachers were admitted pretty freely to Summer Schools, and if they had not taken a suitable course in some University or higher institution they were given special recognition after passing five sessions of summer courses. The fifth course might be a repetition of one of the courses gone through, or a special course in laboratory arts devised for the purpose of giving then some manual dexterity in making and mounting apparatus. These summer courses took in a large number of teachers, who were given travelling allowances and £3.10s. for personal expenses for the month. The students who attend at the Royal College of Science and the Metropolitan School of Art get this grant out of a parliamentary vote: but for all institutions outside those, the money comes out of the Department's Endowment Funds. There have been 500 or 600 Secondary School teachers every year in the summer courses, and as a result a very fair amount of training has been secured.

The Department decided to use the regular teachers for the science work in Secondary Schools. For Experimental Science and Drawing, three hours weekly are required. No school may take one without the other. The first and second year's course is fixed for the schools by the syllabus, and they all adopt this, although the Department allows them to draw up their own if they choose. One reason they are content with the syllabus is that they themselves have a voice in its revision.

Advisory Committee a Safety Valve.

There is an Advisory Committee of Head Masters, and when any great change in the regulations is proposed, the Department calls them together and discusses these things with them. Sometimes they propose alterations or reductions, but the Committee is exceedingly reasonable. Mr. Fletcher con-

sidered a Committee like this a most excellent affair, because changes, proposed as the result of experience in working, would be received very badly, and would cause passive resistance if not actual opposition, unless such changes commended themselves to the Head Masters.

The Committee formed a safety valve, for they could state all their objections and make all their vigorous remarks around the table and hear the reply. As a matter of experience there was always agreement in the end. This Committee is called probably once or twice a year, but with the understanding that they can come together oftener if they desire a meeting.

Grants—How Allotted.

A school that cannot carry out a course for more than three years is not recognized for payment of grants without a special condition. No student can be recognized for grant unless he is aged 12. The Department's idea of a Secondary School is that the student should finish by 16. The programme has Experimental Science and Drawing in all classes. But if under the circumstances students cannot be retained for the third year, the school must take Manual Training. The idea is that a school that cannot retain students for more than a two years' preliminary course is rather a lower type of Secondary School. The pupils are probably the children of parents of industrial occupations and are therefore held for manual instruction. The science course applies to both boys' and girls' schools. In the latter, if they cannot take a third year they must take Domestic Economy. This does not imply that manual instruction is only necessary for that type of school, but it means that they, at least, must take it.

The principle on which grants are made to those schools, when these conditions are satsified, is that they must have a laboratory and a qualified teacher and then grants are made solely on the results of inspection, there being no examinations. There is a staff of 15 inspectors who are entitled to go into those schools at any time and test the students in any way they may think fit. They make casual inspections during the year, and at the end of the session hold something of a field day or full dress inspection.

Then grants are made on the basis of attendance. It might be called a Capitation-Attendance-Efficiency system. That is to say, the greater the number of pupils the greater the pay; the larger amount of time devoted to teaching the greater the pay; and the normal grant fixed in this way is capable of being raised by one-tenth or lowered by one or more tenths on the report of the inspector. If he reports that it is meritorious teaching and above the average, the normal grant would be automatically increased by a tenth. If he says it is bad, the grant is lowered by one tenth, but if it has to be lowered by two tenths the school is warned that the grant will be withdrawn altogether if matters do not improve. On the whole the plan works very well, and 283 schools have taken it up.

Co-operation of Intermediate Board.

Mr. Fletcher did not think they would have taken it up so generally if the Intermediate Board, which controls the Secondary Schools, had not worked in

with the Department. As soon as the programme was published, the Intermediate Board passed a resolution adopting the Department's programme in place of their own programme of Natural Philosophy, and recognizing the Department's inspection in lieu of their own examination, so that the two bodies worked together in the matter. The Department inspects for the National Board, and the latter adopt the inspectors' passes and failures as their own. Hence schools find it convenient and profitable to work on the Department scheme, and there is hardly a school in Ireland that is not using that scheme.

Grants which were originally about £1,000 a year have gone up to £28,000. A school might get from 30s. to £2 per head of pupils, depending upon its efficiency, the amount of time it devotes and the excellency of the teaching. Mr. Fletcher said there was no branch of the Department's work less known than this, yet, in his opinion, none more worthy of attention, because he believed that Ireland stood out almost unique, certainly among the countries of Europe, for this class of work. He knew it was not done so well in England or on the Continent, and he ventured to suggest that this would be found a most interesting and profitable line of enquiry.

Practical Training in Science.

In Boys' Schools, Chemistry is being taught very well and always practically. The boys themselves may be found at work taking specific gravities, etc. The research method is adopted as much as possible, the Department deprecating giving boys information which they could find out for themselves. The boy is given a piece of iron and asked to find the specific gravity on the basis of principles which he has been taught. He has to record all his weighings, which are carefully checked, and the final result is arrived at and discussed and made the basis of instruction in fresh scientific principles. Much importance is attached to method in this matter.

The freedom among the schools to vary between the third and fourth years by choosing which specialized course they will take—Botany, Philosophy or Hygiene, or Geology—has been taken away and replaced by a syllabus in Commercial Geography. He believed that some of the very best teaching of Domestic Economy and Hygiene was to be found in the Girls' Secondary Schools in Ireland. The teaching in all the Catholic Secondary Schools is undertaken by religious orders, and the Nuns themselves have taken to the Department's work with the very greatest enthusiasm. They have rules which make it impossible for them to attend the summer courses in Dublin, though occasionally groups of Nuns from various convents attend at central houses where teaching is given. The teaching in Hygiene and Domestic Economy is being done extremely well in Secondary Schools.

Records of Pupil's Progress.

The inspector pays great attention to the teacher's record of the pupil's progress, and this is one of the first things he asks for and discusses with the

teacher. It is made a matter of friendly discussion—sometimes not so very friendly if the work is bad. More attention is paid to this record than to the work done on the day of inspection, which is more or less superficial.

Accurate records of work by the pupils are insisted upon and they are found most useful. A clear, logical statement of a result arrived at helps enormously the teaching of English, and is of very great educational value. There is no room for sloppy or ill-considered statements. The student must state precisely what results he has obtained and what inference he draws from them. Moreover, he is required to make drawings of his apparatus and thus use drawing as an aid to expression. The keeping of a notebook by the student is one of the best guarantees the Department has of the real nature of the work. It helps the student in another way, for the Department requires that the student should be registered from the beginning of the session to the close, and payment is made on that register; so that the notebook is virtually a Treasury Voucher.

Dealings with the Treasury.

The custom is to say to the Treasury at the beginning of the year "We estimate that we shall require £28,000," or whatever the amount may be. The grant to the schools is never trimmed to fit the estimate, and if it be a thousand pounds less, the money would go back to the Treasury; if a thousand pounds more, the Treasury is usually willing to permit a transfer from some other heading. If a school gets more or less it is neither an advantage nor a loss to the funds of the Department. Mr. Fletcher said it was a great credit to the staff that the estimates were so remarkably close.

Another point of importance is that the Department deals directly with the Secondary Schools, and not with any local authority.

For the work done through the local authorities—county and urban committees—the sum of £55,000 is available, together with the proportion of the local rate, plus the Science and Art grant for Secondary Schools. When this work was begun, there were only two or three technical schools in all Ireland; now there are 50 or 60. These are managed by local committees with co-opted members. These committees had had no experience, as Ireland was very much behind either England or Scotland, where Technical Education took a great leap through the passing of the Local Instruction Act and the Technical Instruction Act in 1890-91, when the Beer and Spirit money was made available for Technical Education. The Irish equivalent was not given to technical education, but to intermediate and primary education, which at that time was perfectly justified, as there was no machinery for the former. The Local Government Act did not pass till 1898, so that from 1891 to 1901, practically, there were ten dead years in Ireland as related to technical instruction.

How Schemes are Framed.

These local Committees in Ireland had no experience in framing schemes; but an Inspector from the Department discusses schemes with them, and these are adopted, submitted to the Board and approved, and the Committees go

to work at once. To-day every county in Ireland has a Technical Instruction scheme. That of County Cork may be taken as typical: it includes advanced evening classes, day trade preparatory classes, technical classes and scholarships for girls, domestic economy day classes, instruction in manual work and domestic economy, preparatory course of instruction, and general conditions that come into all the schemes.

While very great use is made of examinations for the purpose of deciding on the qualifications of teachers, the Department believe they can find out what work is being done in a technical school by means of inspection better than by examinations, which are entirely abolished.

Local Rates and Grants.

No grant is given in any county or town unless it raises a rate, and the Department is generally satisfied with a penny rate. The town of Pembroke raises twopence, and certain other towns raise more than a penny. The basis of distribution of the fund is this:—At the option of the Department the £55,000 may be divided into two portions, one portion available for the 6 county boroughs in Ireland, and the other for the rest of the country. The basis of allocation is this:—The Dpeartment, wishing to relieve any poor district of the consequence of poverty, decided to begin by making up its rate to £20 per thousand of population, so that no town would suffer from poverty in respect to the smaller amount raised by the rate; then the amounts are allocated on the rough basis of population, in some cases the principle being departed from for special reasons. That makes up the grant called the grant from Endowment. There is also the product from the rate; also the earnings from the Science and Art Department.

Itinerant Classes.

From Mr. Fletcher's point of view a most important scheme is that of instruction in Itinerant Classes. The Department set to work to train teachers in manual work and domestic economy, and in special courses, running over 8 months, trained some 80 young tradesmen, and those who passed their examinations were set to work in Counties, being given salaries commencing at £120 and rising. These give their whole time. The principle is that different centres make application to the County Committee, who allocate instructors for courses extending for six weeks in daily classes. The course may be extended to three months if it is going on well, but the Department prefers a six weeks' course repeated the following year. Any old building is rented which is available and suitable, and the plan works very well, criticisms formerly heard having entirely disappeared. Young farmers and all sorts of people attend, and are taught manual instruction on rigid principles, drawing, etc., but in the strictly rural districts people are allowed to make wheelbarrows, gates and anything in the construction of which those principles may be used.

Mr. Fletcher was afraid that manual instruction had been some shibboleth; everything that was useful was condemned; the principle of making a dovetailed joint was thought so important that its value was supposed to be lost if it were put into a piece of furniture. The Department does not agree with that. They find people in the country districts working uselessly unless thay turn out something that is useful in the end; so, while the educational principle is kept in view, these rural classes are making beehives and barrows and all sorts of useful things and are putting these to the betterment of their holdings. Having got the skill, they are beginning to use it. The County Committee meets the expense of the school, other than the teaching, out of the joint fund made up of their own rate and the Department's contribution.

Domestic Economy Teachers and Scholarships.

The same plan is worked in connection with Domestic Economy. These teachers get three years' training, and are available to be appointed by local committees who provide six weeks' courses of instruction for localities in the same way. Usually two sessions are held daily, say, in the afternoon from 4 to 6, and in the evening from 7 to 9. That has been found useful, because senior girls from the National Schools may attend the afternoon class outside of school hours. To prevent overlapping, a rule was made that no girls under 14 should attend, and no scholar on the roll of the Elementary School; but the classes are always attended by a number of girls who have just left school. The evening classes are very largely attended by women of the district, sometimes the ladies, sometimes servant maids and daughters of farmers, and these all work together. Mr. Fletcher attended one of these classes in the previous week, and saw the National School master's wife and the wife of a hotel-keeper and farmers' wives from a distance of four or five miles who went in every day.

The Department allows County Committees to grant Scholarships for girls, which are tenable at Schools of Domestic Science. They are worth £15, and the local Board adds £2, making £17 for board and residence. The Department has a School of Domestic Training at Killarney, which is devoted quite definitely to training in Domestic Science, and the moment these girls are trained they are immediately snapped up.

Day Trades Preparatory Schools.

The Day Trades Preparatory Schools form an entirely new type, organized by the Department. While a certain amount of English is kept on the programme, the subjects may be said to be Applied Drawing, Workshop Arithmetic, Experimental Science, Manual Instruction, with perhaps a little Commercial Instruction. These schools are worked mainly through local authorities, which send in an estimate of their probable expenses, and if approved, the Department pays three-quarters of the actual expenses as shown by vouchers, the other quarter being provided from local funds, consisting of the Department's grant plus local rates.

Aid to Home Industries.

The Home Industries in Ireland are such as Lace, Crochet Making, Sprigging, Knitting and Hand-loom Weaving, and the Department originally allowed grants towards teachers in these various industries, but the plan did not work well because when a class was not well attended and went down, the grant continued. The Department then gave capita grants and required that every scholar should receive instruction in Domestic Economy, which was defined, and that worked very well. In addition to that, the Department allowed County Committees to employ teachers for those home industries and lend the teacher if they liked, and that plan had worked very well, notably in Fermanagh, where there are 8 teachers who control these little home industries, mainly Crochet, Sprigging and Embroidery. Both these methods of aid to industries through County Committees have their merits.

The Department also directly encourages various home industries, though its powers are limited in this direction. Industries have been started which have arisen out of the Department's courses of Manual Instruction; but the industry known as Sprigging is a development of great interest. This consists of embroidering the corners of handkerchiefs with initials, etc. It is a very widespread industry in Ireland, but as a hand industry is undoubtedly declining, a machine having been found to do the work. The Department sent a special inspector to Switzerland to report on the machine embroidery there, and also made enquiries at home and found that three large Belfast manufacturers sent all their linen to Switzerland to be embroidered. It was taken in duty free under a special Act, and sent back to Belfast, and of course it was Irish linen. These people actually established factories in Switzerland for this purpose. There is no doubt that the work could be done in Ireland, and the Department has lately established a school at Ballydugan in the North of Ireland, to which this large Swiss machine has been brought, on which several handkerchiefs can be done at once by a simple pantograph movement at one end, and it is doing very good work. The Department is giving aid to this school, and may establish others.

The Department's Various Grants.

The Department can give grants under 11 heads, and it is difficult to say what cannot be touched under those heads, which cover the following industries—building, metal, textile, printing and engraving processes, furniture, leather, woodworking, carriage building, electrical, chemical and agricultural.

The old Science and Art plan having proved unsuitable, the Board of Education finally allowed the Department to have its own scheme. The Department now pays a grant on attendance, and in addition gives what is called an increment grant for continued attendance in the case of individual students, which is paid on the total attendance-hours in all subjects of an approved course

in the preparatory or specialized courses, the rate of increment per hour being as follows:—

For each hour from	21 to 40	One Penny.
	41 to 60	Twopence.
	61 to 80	Threepence.
	81 to 100	Fourpence.
	100 to 120	Fivepence.

No increment is paid on attendance-hours exceeding 120. This has the effect of causing the classes to keep up a good attendance, either by pressure upon the student or by giving inducements for regular attendance.

The Department has a system of inspection to ascertain whether students are really profiting by the instruction as they should. The inspector visits from time to time and sits and hears the lesson, examines the students' note books, etc. The method of written examination has been tried, and Mr. Fletcher ventured to say it had been found wanting. If a paper examination is instituted and all the students are required to go in for it as a basis of payment of grant, it would stereotype the teaching. Mr. Fletcher would like to make inspection more frequent, but the Department was handicapped by lack of inspectors, so the endeavour was made to inspect very thoroughly, each school being visited several times each session, and a school like the Belfast Institute probably twenty times each session. At the same time he frankly admitted that it would be quite possible for a class to escape, but the Department left something to the conscience of the local authority.

There is always a fight between the school that wants to get as much grant as it possibly can and the Department that wants as much efficiency as possible; and the lower standard of students coming into the schools is a handicap, so there always has to be a nice adjustment between what is possible and what is perfect.

All the Central Institutions run by the Department, such as the Metropolitan School of Art, minister to the other parts of the scheme.

Lack of Suitable Buildings.

When the Act was passed, no grant was made for buildings, and there is a lack of suitable technical school buildings. The work has gone on in all sorts of unsuitable premises. People in Ireland did not believe that technical education had elements of permanence. In one place Mr. Fletcher was told they would not have half-a-dozen pupils, yet on the opening night there were over 200. It was suggested that this was a flash in the pan, but they not only remained but increased in number.

Now, after 10 years, the Department is quite convinced that technical education has come to stay, and the attendance compares most favorably with towns of similar size in England. What is now needed is proper accommodation. Quite a large number of local authorities have borrowed money and built, and the Department allows the interest and sinking fund as a first charge on the

grant, so that quite a number of small townships have put up schools, and a number of buildings have been modified for technical instruction. The money which is allowed for interest and sinking fund was primarily intended for annual maintenance, and makes such a hole in the annual income as to rather interfere with educational work. Parliament has been pressed for a building fund, which is a great financial need, but this has not yet been granted. It is a question whether it is fair to ask the localities for a higher rate than one penny. They have power to borrow, and they have used it most freely, but they have not power to raise more than twopence, and some towns have reached their limit.

Scholarships for Boys at Schools and Trades.

There are scholarships for boys, tenable at Secondary Schools and paid for out of the funds of local committees. Hitherto these scholarships, which were intended for boys who were to follow industrial careers, were held in Secondary Schools, but the scheme failed, as the boys never went on to an industrial school. Now these scholarships are made tenable at Trade Preparatory Schools, which a boy may attend for two years, or he may be apprenticed, and the Department will guarantee him 15s. a week till he is out of his apprenticeship, on condition that he attends evening classes and follows the programme approved by the Department. Perhaps the first year the boy gets nothing from his employer; then the Department will give him 15s. The second year he may be paid 15s. by his employer, in which case the Department gives him nothing; but before he is apprenticed the Department has to know the terms of apprenticeship, and to some extent will be able to have terms in competition. Mr. Fletcher hoped the scheme, which had only been initiated, would work very well.

SESSIONAL PAPER No. 191d

CHAPTER XXI: ORGANIZATION OF THE DEPARTMENT.

The purpose of the Agricultural and Technical Instruction (Ireland) Act, 1899, is to establish an Irish Department of State, so constituted as to be representative at once of the Crown, the local government bodies of the country, and those classes of the people with whom its work is chiefly concerned; and to give to this Authority the function of aiding, improving and developing the agriculture, fisheries and other industries of Ireland, in so far as may be proper to such a Department and in such manner as to stimulate and strengthen the self-reliance of the people.

SECTION 1: THE VARIOUS BODIES CONSTITUTED.

With this end in view, a Department has been constituted with a staff paid out of a Parliamentary vote. There have been appointed, to advise and co-operate with the Department, an Agricultural Board, a Board of Technical Instruction, a Council of Agriculture, and a Consultative Committee of Education. There have been placed at the disposal of the Department and its Boards an endowment of £166,000 per annum and some additional sums as indicated elsewhere.

Council of Agriculture.

The Council of Agriculture, constituted under Section 7 of the Act of 1899, consists of 104 members, of whom 68 are appointed by the County Councils and 34 are nominated by the Department, the President and Vice-President of the Department being *ex-officio* members.

By Section 27 of the Act the members of this Council, and of each Board established by the Act, hold office for terms of three years.

The Agricultural Board.

The Agricultural Board consists of 12 persons—8 appointed by Provincial Committees of the Council of Agriculture and 4 appointed by the Department.

That portion of the Department's Endowment Fund intended for the purposes of agriculture, rural industries, and sea and inland fisheries (with the exception of a special sum of £10,000 for sea fisheries, and certain specified capital sums) must be administered by the Department with the concurrence of the Agricultural Board. In addition to their control of all such expenditure, this Board acts as an advisory body to the Department in reference to "all matters and questions submitted to them by the Department in connection with the purposes of agriculture and other rural industries."

Board of Technical Instruction.

The Board of Technical Instruction consists of 21 members, appointed as follows: 3 by the county council of each of the county boroughs of Dublin and Belfast; 1 by a joint committee of the councils of the several urban county districts in the county of Dublin, such joint committee consisting of one member chosen out of their body by the council of each district; 1 by the council of each county borough not above mentioned; 1 each, by the Provincial Committee of each Province, by the Commissioners of National Education, and by the Intermediate Education Board; and 4 persons appointed by the Department.

The Consultative Committee.

The Consultative Committee consists of the Vice-President of the Department as Chairman, and one person appointed by each of the following bodies: —The Commissioners of National Education, the Intermediate Education Board, the Agricultural Board, and the Board of Technical Instruction.

The function of the Committee is to "co-ordinate educational administration." The operations of the Department as regards science teaching and technical instruction, whether as applied to agriculture or to urban industries, have an intimate bearing on the work of primary, secondary and higher education, and the success of the Department's work must largely depend on the manner in which the various educational systems of the country are worked in harmony. This harmony it is the object of the Committee to promote.

Local Organization.

The Department is deeply convinced that in Ireland, and especially in relation to agriculture and to industries connected with agriculture, organization has an essential part to play in the economic and social elevation of the people. Indeed, it would appear as if this agency of progress had, comparatively speaking, greater possibilities here, on account of the racial capacities for associated effort which the people display, than even in countries which, with the aid of organization, have succeeded, for the time being, in driving Irish agricultural produce from its due place in the markets. The Recess Committee found that Departments of Agriculture in the countries whose competition Ireland feels the most keenly, devote a considerable part of their efforts to promoting agricultural organization, recognizing it as an axiom of their policy that, without organization for economic purposes amongst the agricultural classes, State aid to agriculture must be mainly ineffectual, and even mainly mischievous.

Thus, for the sake of efficiency in its educational work and of economy in administration, the Department would be obliged to lay stress on the value of organization. But there are other reasons for its doing so: industrial, moral, and social. Organization is itself an agency of the greatest power and, in modern economic conditions, an essential agency for the advancement of the agricultural industry, and of others connected therewith, not only rural districts,

but undertakings in which town and country share; and by its means capital (as well as directing skill and economic management) is made available both for such undertakings and for the most minute concerns of the smallest farmers and labourers to whom the use of helpful capital is possible through no other channel.

Again, organization is perhaps the most direct means of nourishing the self-reliance and strengthening (so to speak) the moral back-bone of the people; for, through mutual help, it renders the self-help of a community at once effective and brings the intelligence of the most intelligent to assist in promoting the interests of the most backward individual who engages in the common effort. But not the least important aspect of organization for Ireland, where the isolation and dulness of rural life have something to do with the continuance of emigration, is its social side. Around every little society, through which the people of a district have been successfully working out their industrial advancement and learning the powers which combination gives the simplest and most remote of communities, even in complicated business affairs, there is an inevitable tendency for combined efforts for other purposes to group themselves. In this way opportunities and means for educational improvement and social amenity are multiplied in places where such means and opportunities did not exist before; while the faculties of the people are expanded, their hopefulness increased, and life at home on the Irish countryside is rendered more attractive.

SECTION 2: ADMINISTRATION AND FUNDS.

Principles of Administration.

Two principles of procedure are clearly indicated, as well as by the situation the Department has to deal with as by the legislation they are required to administer.

1. Administration of this kind must fail in its best result unless it seeks to evoke and fortify the self-reliance, enterprise and sense of responsibility of the people. Both economic and social laws dictate this principle.

2. In encouraging local initiative and responsibility the danger, on the other side, of an indiscriminate multiplication of unrelated local schemes must be guarded against by a due conservation of the principle of central direction. It is the duty of the Department to keep in mind the national as well as the local point of view, and to bring to bear on schemes and problems that power of co-ordination and that expert aid which the resources of a Central Authority, acting and thinking with and for the whole country, can command. The importance of this principle is well illustrated in the efficiency of the Continental systems of State aid for Technical Instruction and Agriculture, on which the constitution of this Department has been to some extent modelled.

Both these principles are provided for in the Act in such a way as mutually to strengthen each other. The Advisory Boards of the Department, who control the expenditure of its Endowment Fund, are mainly constituted by the local self-governing bodies of the country.

Relations with Local Authorities.

With a view to rendering its advice more effective and better informed, the Department considers it wise to establish, through their officers, direct and personal relations with the local authorities, societies, schools and those classes of the people generally with whom their work has to do. It is felt that correspondence alone would be an inadequate means of explaining a new and complicated Act, and of working out highly technical schemes with bodies who are under no obligation to adopt them. Hence, the Department, in the person of its representatives, has been ready to visit every local authority, confer with them on the spot, and aid them with expert advice after thorough inspection and examination of local conditions. Practically all the county councils and urban councils or Technical Instruction Committees in Ireland have thus been visited by the Department—some of these bodies many times—and very numerous personal conferences have taken place at the Department in Dublin between its officers and the representatives of local committees.

The Endowment Fund.

The Department's Endowment Fund at present consists of an annual income of £166,000 under the Agriculture and Technical Instruction (Ireland) Act of 1899, £5,000 under the Agriculture and Technical Instruction (Ireland) Act, No. 2, of 1902, £19,000 under Section 49 of the Irish Land Act of 1909, and £7,000 from the Ireland Development Grant. From the total, amounting to £197,000, a sum of £62,000 has to be set aside for the purposes of Technical Instruction (as distinguished from Agricultural Instruction), and £10,000 for sea fisheries. A provision of about £1,000 a year has also to be made for the payment of the superannuation allowances of certain persons formerly employed under the Commissioners of National Education, and for travelling expenses of members of the Council of Agriculture and of the two Boards established by the Act of 1899.

Any portion of the Endowment Fund, under this head, not expended in any financial year is accumulated by the Department in accordance with Section 16 (4), and may be used in future years for expenditure upon general or local schemes, at the discretion of the Department and the Agricultural Board.

In addition to the Endowment Fund there are Parliamentary votes for some of the work done under the Department. In these provision is made for the salaries and other expenses in connection with the institutions and officers transferred from other departments under Section 2 of the Agriculture and Technical Instruction (Ireland) Act of 1899, as well as for salaries and expenses of officers appointed since the 1st April, 1900.

The expenditure falls into two main natural divisions: (1) Moneys which are required for the purposes of a general character, affecting the country as a whole; (2) Moneys which are required for local schemes. This distinction is duly regarded in the administration of the funds by the Department and the Board.

Aid to Local Schemes.

In regard to local schemes, it is of importance to have it clearly understood that aid is intended to be applied to schemes, and not to localities as such. The function of the Department is not to distribute money to localities, but to apply financial support and skilled assistance to approved schemes for giving effect to specific purposes, for the attainment of which the Department has been created. The schemes must be approved by the Department, and they must, save in exceptional cases, be aided by local contributions before the Department's funds can be applied to them. But the contribution from the Department's funds is not in any fixed proportion to the local contribution. Provided the Department and Board are satisfied that the locality does its duty, and the actual local contribution is in just proportion to the genuine capacity of the locality to contribute, they are free to aid schemes in that locality with regard only to the merits of the schemes, to the needs of the locality, and to the relation of the schemes with the general system for the country as a whole of which they are part. To such schemes in any county, or to the extension of such schemes, or to any particular feature of them, the Department's contribution may be increased or lessened in future years according as the needs of the locality, the success or non-success of parts of the schemes, the amount of the local contributions or other circumstances may determine.

That policy in respect to the contribution by the Department not having any fixed relation to the actual local contribution was modified in 1910.

In view of the increasing demands on their funds, resulting from the extension of county schemes, it was accordingly decided, with the concurrence of the Agricultural Board, that the amount of the Department's grants towards the cost of agricultural schemes should in future bear some proportion to the conditions of each county, taking into consideration valuation, population, number of breeding stock, and area under crops. This new method of distribution took effect with regard to all agricultural schemes coming into operation after 30th September, 1910, and will remain in force for five years from that date.

The net expenditure on the agricultural side of the Department's work in 1909-10, including the grant of £9,000 for the purpose of providing instruction in manual work and domestic economy in rural districts, was £117,778.

For Agricultural Instruction.

The grants for Agricultural Instruction, sanctioned with the concurrence of the Agricultural Board, amounted to £28,088. The votes to County Committees included £5,363 for general administration and £16,891 for Agricultural Improvement Schemes. These were outside of and in addition to grants for Live Stock schemes and shows. Altogether there are 14 main schemes in regard to which the Department co-operates with County Committees. The first seven which relate to Horses, Cattle, Swine, subsidies to Agricultural and other societies, prizes for Cottages and Small Farms, lie outside the scope of this Report. Other schemes, such as Instruction in Agriculture, Winter Agricultural Classes, In-

struction in Horticulture and Bee-keeping are dealt with. They may be taken as typical of the others. Altogether 131 instructors and instructresses are employed permanently in connection with the schemes.

For Technical Instruction.

Under Section 16 (C) of the Agriculture and Technical Instruction (Ireland) Act of 1899 an annual sum of £55,000, allocated for the purposes of Technical Instruction, is to be divided into two parts. It was allocated by the Department with the concurrence of the Board of Technical Instruction for the triennial period ending 31st March, 1912, as follows:—

For Technical Instruction in county boroughs..... £26,000
For Technical Instruction elsewhere than in county boroughs, and for central purposes..... £29,000

The Board therefore control the expenditure of an annual sum of £29,000, which is applicable for technical instruction elsewhere than in county boroughs, and for certain central purposes. The balance of the £55,000 viz., £26,000, allocated (with the concurrence of the Board) for technical instruction in the six county boroughs, is applied in aid of schemes in those boroughs subject to the approval of the Department alone. Out of the sum £29,000 referred to, the Department (with the concurrence of the Board) set aside an annual sum of £4,000 for central purposes, *e.g.*, for Senior Scholarship schemes, provision for training teachers, etc. The remaining £25,000 is distributed in aid of approved schemes of technical instruction in urban and county districts.

On the whole the amount contributed by the Department from its Endowment Fund, for Technical Instruction, under 34 county and 34 urban districts and county borough schemes, amounted to £58,916 as against £29,514 from local rates. The total number of pupils in attendance was 42,909 (16,784 young men and 26,125 young women). Of these 2,948 are boys and 2,998 are girls who are still attending school.

As the funds available for the ordinary subjects of Technical Instruction are all needed for the urban schemes, the Department again found it necessary to ask the Agricultural Board to allocate a sum of £9,000 out of the funds administered with the concurrence of that Board, for Manual Instruction and Domestic Economy classes in rural districts. Such classes are regarded as part of the general scheme of Agricultural Education, but, for administrative reasons, the Department have hitherto found it convenient to administer this sum with the concurrence of the Board of Technical Instruction. Classes in lace and crochet-making, and other rural industries, are also financed from the agricultural surplus, the amount voted in 1909-10 for this special purpose being £3,000.

The grant in aid of Technical Instruction for 1909-10 commonly known as the "equivalent grant," was duly received from the Ireland Development Grant, and amounted to £7,000.

The total of the sums available in 1909-10 for Technical Instruction in non-agricultural subjects was £72,182 exclusive of the balance of £74,192 brought forward from the year 1908-09. The expenditure was £91,410, of which £41,184 was paid to the county boroughs.

The Parliamentary Votes.

The expenditure in respect of the institutions maintained from the Parliamentary Votes during the year 1909-10 was as follows:—

Royal College of Science	£16,097
National Museum of Science and Art	13,568
National Library of Ireland	5,477
Metropolitan School of Art	4,360
Royal Botanic Gardens	4,636
	£44,138

The Parliamentary Votes also provided grants for Science and Art Instruction in Ireland, payable to schools which adopt the Department's programme for Experimental Science, Drawing, Manual Instruction and Domestic Economy. The provisions made for these purposes was £48,750, an increase of £5,150 on the corresponding provision for the previous year.

From the Parliamentary Votes grants were paid as follows:—

	No. of Schools.	No. of Pupils.	Amounts.
Day Secondary Schools	286	13,406	£27,583
Technical Schools (mostly evening classes)	87	8,102	18,223
Other Grants to Technical Schools	....	1,802	3,920
Primary Schools, for Drawing and Manual Instruction	95	.....	1,639

These Parliamentary Votes are outside of and separate from the amounts already referred to as available from the Endowment Fund.

CHAPTER XXII: THE AGRICULTURAL BRANCH OF THE DEPARTMENT.

Introductory.

The term "Agricultural Branch of the Department" is used here to indicate the portions of the Department's work which are more directly concerned with education for and in agricultural and housekeeping occupations. It has not been thought necessary to describe the many useful activities of the Department in connection with schemes for the improvement of live stock by grants to bring about the use of thoroughbred animals, or subsidies to agricultural and other societies, or prizes for cottagers and small farmers.

No report will be made on the branches concerned with Fisheries, Statistics and Intelligence, Veterinary matters or Transit and Markets. Specific mention is made of the matter here lest the reader might be led to suppose that the whole of the activities of the Department of Agriculture and Technical Instruction were confined to the two branches dealt with in this Report, viz., the Branch of Agriculture in so far as it conducts or promotes education and instruction for agricultural purposes,and the Branch of Technical Instruction which is concerned chiefly with the training and instruction of workers for and in manufacturing and building industries.

When the Department was inaugurated it found itself confronted by conditions which required competent men and women as leaders and teachers in various capacities on its staff. Some men who had obtained their experience and training in England and Scotland were secured. The further need was a large number of Irishmen and Irishwomen who understood local conditions, were in sympathy with the character and needs of the various communities, and who had become competent by acquisition of further knowledge, scientific training and some practical experience in administration, to fill positions which would be assigned to them. In consequence, the principal features of the procedure which was adopted were:—

(1) The reorganization and development of the educational institutions (the Royal College of Science, the Albert Agricultural College and the Munster Institute) in existence at the establishment of the Department and transferred to their control.

(2) The postponement of the establishment of agricultural colleges and schools until the farming classes generally should be sensible of the need for more detailed and extended instruction than could be given by itinerant lecturers.

(3) The provision of facilities for training young farmers to become itinerant instructors, and for supplying qualified teachers for agricultural schools when the time for their foundation would arrive.

(4) The inauguration of a system of itinerant instruction calculated to bring the farming classes into touch with the latest advances in their industry,

and, at the same time, to prepare the way for permanent institutions for agricultural education.

Under such a policy no first or second order of importance can be regarded as attached to any one of these features, and no one of the features did receive first attention to the neglect of others.

The following resumé of the work of the Agricultural Branch at the present time is a brief survey of what is being done in the development of each of these features.

SECTION 1: ARRANGEMENTS FOR INSTRUCTION.

Information on the Agricultural Work of the Department obtained from PROFESSOR J. R. CAMPBELL, *Assistant Secretary in respect of Agriculture.*

The work of the Agricultural Branch may be divided into,—

(*a*) That which is administered jointly by the local authorities and the Department, and

(*b*) That which is administered by the Department directly from the central offices.

Generally speaking, when the work is such that the county can be made the unit for the purposes of administration, and particularly where such an arrrangement would enable each district to receive benefits proportionate to its contribution, the administration of the schemes is delegated to the local authority. Such, for example, is the procedure adopted with schemes for encouraging improvement in live stock and schemes of itinerant instruction in various branches of agriculture. On the other hand, work for which the county cannot be conveniently made the unit and which does not apply equally to the whole county is administered directly from the Department's offices, such, for example, as the investigation of special outbreaks of diseases of stock, the encouragement of improvement in the management of creameries, and a variety of other work and investigations to which reference will be made subsequently.

FUNCTIONS OF LOCAL AUTHORITIES.

The local authorities are the County Councils, of which there are 33. Each Council, however, for the purposes of the Department's work, appoints a Committee of Agriculture composed partly of members of the Council and partly of other persons. To this Committee the Council usually delegates full powers, subject to the approval of the Department, for the administration of the funds placed at its disposal. The County Council alone can raise a rate for the purposes of the Act.

The amount raised by the county rate is usually transferred by the County Council to the County Committee to be applied by them, subject to the approval of the Department, partly to schemes of agriculture and partly to schemes of technical instruction. In a few cases the amount to be spent on agriculture and on technical instruction respectively is specified by the County Council. In

the majority of cases, however, it is left to the County Committee to decide the proportions.

In the first year 31 out of 33 County Councils raised a rate and appointed Committees for the purposes of the Act. Every year since all the 33 Councils have done so.

Relations with Department.

The relations between the Department and these Committees are very satisfactory indeed. In the first years, when the procedure was not well understood, there were administrative difficulties and delays; but all these have been largely, if not altogether, overcome, and an excellent understanding has for some years existed between the leading members of the Committees and the officers of the Department, who are constantly in conference, either at the local meetings or at the offices of the Department, to discuss the details of and the arrangements for carrying out the work.

Early in August these outline schemes are explained to, and laid before, the Agricultural Board, with a statement of the estimated amount required from the Department's funds (1) to meet the cost of central administration, and (2) to meet the Department's contribution to the funds of the County Committees. When the necessary funds have been voted by the Agricultural Board a conference at the Department's offices of secretaries of County Committees has usually been held to discuss any new provision in the schemes, and to arrange dates for meetings of the Committees which are attended by the Department's inspectors for the purpose of assisting in arranging details of the programme and finances for the ensuing agricultural year. As soon as each County Committee has decided on the schemes which it proposes to put into operation, and has provisionally allocated funds therefor, the secretary notifies the Department, who then intimate their approval as well as the maximum of their contribution for the year. Where the County Committee and its secretary are alive to the interests of the county, the work is usually in full swing by October, except, of course, such sections of it as depend on the seasons.

The appointment of local or district sub-committees who see that the district they represent takes full advantage of the schemes, is a most important factor in insuring the success of the work. The Department have urged the appointment of such sub-committees to assist the statutory committees, and hope that still more use will be made of them in future years.

The expenditure of at least half the Department's Agricultural Endowment is now in the hands of the local authorities.

Supervision of the details of this expenditure cannot be undertaken by the Agricultural Board. It therefore rests with the Department to discharge this duty. If they use their control unreasonably, they will very soon be brought to task either by the Board, who are themselves members of County Committees, and to whom the local representatives would complain if they were being improperly treated as regards funds, or by the Council of Agriculture.

Attitude Towards Agricultural Education.

Of all the agricultural problems which the Department have had to solve, that of gradually leading Irish farmers to appreciate an education for their sons, who are to succeed them, has been the most difficult, and has received the most attention.

It did not require a prolonged study of the conditions of agriculture in Ireland to show that there is good reason why it would be impracticable to at once introduce methods which have proved successful in other countries. It is impracticable to bring the farmer himself to school, and therefore the only way he can be brought into contact with the application of science to agriculture is by sending round instructors to give lectures in the evenings; to visit holdings during the day and discuss privately with the occupiers the various problems which confront them in their practice. Such an officer, if he is armed with a thorough knowledge of his business, both scientific and practical, rarely fails to convince a farmer that he would have been more successful had he received an agricultural education, and that it is to his son's advantage that he should be given one. Such work, however, is slow, and even in the most progressive countries requires patience and determined perseverance. It is universal experience that the more highly educated, capable and progressive the farmer, the more he appreciates technical education.

Policy of the Department.

The policy of the Department has been,—

(1) To provide at one central institution the highest form of technical education for the training of men who are to become teachers and specialists in agriculture. (This has been done at the Royal College of Science in connection with the farm and college at Glasnevin.)

(2) To provide at least one high-class agricultural college which would form a stepping stone to men desirous of entering the Royal College of Science, as well as men, the sons of well-to-do farmers, who wish for an education to enable them to manage their own farms, and men who desire to become creamery managers, or who wish to have a special training to fit them as horticultural or poultry experts, stewards, land agents, or other occupations in connection with agriculture. (This has been done at the Albert Agricultural College, Glasnevin.)

(3) To provide provincial institutions at which young men who can be spared from the farm for one year can be taken in as apprentices, taught agriculture, both practical and technical, at a fee proportionate to their means. (This work, which had to be delayed until teachers were trained, is now in progress at three such institutions, and the provision of others is in contemplation.)

(4) To provide winter schools of agriculture where the sons of farmers could obtain technical training at small expense during the winter months, when they can best be spared from farm work.

(5) To provide one central higher institution for the training of women in the domestic economy of the farmhouse, and in work which falls to the lot of

women to perform in connection with the farmyard, as, for example, dairying and poultry-keeping. (This provision has been made at the Munster Institute, Cork.)

(6) To provide for young women education in domestic economy and farmyard lore at residential and day schools. (This has been done at a number of institutions, while the equipment of others is under consideration.)

(7) To provide in each county, by a system of itinerant instruction in agriculture, horticulture, dairying, poultry-keeping, and bee-keeping, instruction and advice for farmers and their wives, sons and daughters who cannot avail themselves of other means of acquiring information.

A Graduated System of Education.

Thus the Department have laid the basis of a graduated system of agricultural education by means of which the youth who is inspired by the work of the itinerant instructor may be able to obtain education in the local winter school of agriculture, from which he may graduate to the provincial agricultural school, thence to the Albert Agricultural College, or the Royal College of Science, according to his circumstances and his education, and equip himself for the highest offices in connection with agriculture which the country has to bestow.

One important aspect of the question should be mentioned in this connection, viz., that the education of the agricultural student must be accelerated when the influence of the teaching of practical science in the Secondary Schools provided under the Technical Instruction Scheme comes to be more and more felt. It may be taken for granted that the boy who has had a training in practical science in the Secondary School will benefit more by his attendance at the lectures and demonstrations of the agricultural instructor, at the classes in the winter schools, and at the provincial institutions, than the boy who goes to these without this preliminary training.

SECTION 2 : ALBERT AGRICULTURAL COLLEGE, GLASNEVIN.

This College is being used to train teachers and leaders for what may be called the extension schemes of the Department, carried out in co-operation with local authorities. The entrance examination and supplemental entrance examination, held in September and October, 1909, were attended by 60 candidates—this number and that of students admitted showing a substantial increase as compared with the previous session. Five students of the College obtained Scholarships in Agriculture, tenable at the Royal College of Science. The number of students at the College during the years 1909-10 was as follows:—

Agricultural Course	35
Horticultural Course	7
Royal College of Science students	16
Total	58

28 men trained at this College are now employed by the Department in connection with its work.

Although the reorganization of the agricultural institutions taken over by the Department in the year 1900 was at once proceeded with, and provision made for training instructors and teachers, it has not yet been found possible for these institutions to meet fully the demand for qualified persons to take up the work of the various schemes. In 1909–10 several County Committees had again to be disappointed in their expectation of obtaining instructors trained by the Department. The number of persons so trained, who were employed by County Committees or by the Department, now amounts to 81, in addition to the 52 women who have been trained at the Munster Institute.

The College is situated on the north side of Dublin in a healthy situation, about 170 feet above the sea level. It is easily reached by tram to the Glasnevin terminus, from which it is distant less than a mile. The College consists of a residence for between 50 and 60 students, together with a farm, orchard and gardens, all covering an area of about 180 acres.

Admission, Staff, Diploma, Etc.

Admission to the College is conditional on passing the entrance examination and furnishing evidence of good health and character. Only resident students, prepared to stay the whole session and to take the full curriculum, are admitted. They must not be less than 17 nor more than 30 years of age on 1st September.

The staff consists of Principal, House Masters, Agriculturalist, and teachers of chemistry, botany, zoology, veterinary hygiene, horticulture, dairying, poultry-keeping, bee-keeping and woodwork. A competent Drill Instructor attends twice weekly to see to the physical training of the students.

The clergy of the different denominations also visit the College weekly to give religious instruction. The domestic comfort and bodily health of the students are under the care of an experienced matron.

The College diploma is awarded partly on the result of the sessional examinations and partly on the work done throughout the year. It is of two classes, the first being reserved for those students who add to an intelligent grasp of scientific principles a high standard of skill in practical farm work.

Every encouragement is given to the pursuit of athletics and to the development of social intercourse among the students.

The College Discussion Society meets frequently throughout the session. The papers read before it relate to topics of current interest to the farming community.

The library is supplied with standard works on agriculture, and copies of the best farming periodicals are procured regularly for the students' use.

Prizes are given by the Department for progress made, for work done, and for services cheerfully rendered the common weal. These prizes are awarded after consultation with the Principal, and not merely on marks obtained at the examination.

Courses of Instruction.

The College provides two distinct courses of instruction—one for farmers, the other for gardeners. The former or Agricultural course occupies in the Department's scheme of agricultural education a position intermediate between the instruction given at the Agricultural Stations and that provided by the agricultural faculty at the Royal College of Science, Dublin. The Horticultural course is intended for selected pupils who are seeking to qualify for the post of Instructor in Horticulture.

Agricultural Course.

This course is intended for young men who desire a technical and practical knowledge of agriculture, to fit them for entrance to the Royal College of Science, for becoming farmers, or for engaging in any other occupation, such as creamery management, which requires technical training in the sciences underlying agriculture. It includes instruction in agriculture in the classroom, farmyard and fields, supplemented by lessons in dairying, horticulture, poultry management, bee-keeping and veterinary hygiene. The elements of physics, chemistry, botany, zoology, and entomology are taught so far as is necessary to the proper understanding of the principles underlying the most approved farm practice.

Instruction is also given in book-keeping, surveying and woodwork, while literature, mathematics and drawing receive such attention as is found requisite.

The subjects included in the examination for admission are as follows:—

(1) English, including dictation and composition; (2) Arithmetic, including calculations requiring a thorough knowledge of weights and measures, decimal and vulgar fractions, percentages and interest; (3) Mathematics—the elements of mensuration and algebra to simple equations; (4) Agriculture—the questions on this subject are framed with a view to testing knowledge acquired by practical experience of farm work. No text-book is prescribed or recommended. The examination may be oral as well as written.

The fees for tuition, board, residence, laundry, and ordinary medical attendance during the session are:—For students whose parents or guardians derive their means of living mainly from farming in Ireland, £15; for students other than the foregoing, £50.

Horticultural Course.

This course is suited for men who have already had experience in fruit-growing and general gardening, such as can be obtained by working for four or five years under a fully qualified gardener. In addition to the practical work in the gardens, class-room instruction is given to the pupils to enable them to understand the scientific principles underlying horticulture.

Applicants for admission must be at least 20 years of age on the 1st October, in good health and of strong constitution, and should have received a fair general education.

The subjects included in the examination for admission are:—

(1). English—to be tested by dictation and a short letter.

(2). Arithmetic—the first four rules, simple and compound; a knowlege of weights and measures and percentages.

(3). Practical fruit-growing and gardening.

A high standard in English or arithmetic is not expected. The examination in practical fruit-growing and gardening covers the whole range of these subjects.

Pupils receive an allowance of 18s. per week during their first session and of 20s. per week during their second session.

When in receipt of these allowances they are required to find their own board and lodging. In the event of lodging accommodation being provided for them at the College the allowances are modified.

Pupils of the Horticultural School are subject to the conditions under which the gardeners at the College are employed.

The Department does not undertake to employ or to procure employment for the pupils at the close of the course, but the names of those who qualify are sent to County Committees of Agriculture with an intimation that they are eligible for appointment by such Committees to instructorships under the Department's scheme of Instruction in Horticulture and Bee Keeping.

SECTION 3: AGRICULTURAL STATIONS FOR FARM APPRENTICES.

While the operation of the schemes of itinerant instruction was being extended advantage was taken of such opportunities as arose for providing more intensive forms of instruction by means of permanent Agricultural Stations for the training of Farm Apprentices, and by 1909-10 three new Stations and one residential Agricultural School for boys had been established. These Stations are most serviceable in the training of young farmers to become itinerant instructors, although it is desired that they should also have some training at the Albert Agricultural College.

There are three such Stations in Ireland, one at Ballyhaise, County Cavan, another at Athenry, Co. Galway, and a third at Clonakilty, Co. Cork. The latter was visited by the Commission.

The Station at Clonakilty.

Young men who intend to follow the farming profession and who desire to acquire a practical knowledge of its several branches are admitted to the Station as apprentices.

The farm is managed by an experienced agriculturist under whose direction the apprentices are required to take part in all the work of the fields and of the farmyard, whether in connection with seasonable operations or permanent improvements. In the class-room attention is given, in the evenings and at

other times when outdoor work is not pressing, to English, Arithmetic (including Surveying), Book-keeping and Technical Agriculture. This instruction is not intended as a preparation for any examination. It is of such a character as to continue the general education of the apprentices, and be useful to them in their future career as farmers.

The applicant for apprenticeship must be not less than 17 years of age on the 1st October, and must give an undertaking that it is his intention to become a farmer in Ireland. He must also provide evidence of a sure prospect of obtaining a farm of his own or *bona fide* occupation on a farm. Admission is conditional on passing the entrance examination, producing certificates of good health and character, and paying the required fee. Preference is given to applicants from the Province of Munster, especially those who have attended a course of instruction under the Department's scheme of Winter Agricultural Classes. The latter are exempted from entrance examination provided their attendance and progress at the Agricultural Classes were satisfactory. It will also be a recommendation if the applicant produces a certificate, from the itinerant Instructor in Agriculture for the county in which he resides, that he has taken advantage of the Instructor's lectures and demonstrations and has shown a desire to improve his knowledge of tillage farming. The apprentices are required to reside in the buildings attached to the station, where they are in the charge of a House-Master and Matron. The session runs from October till the following September.

Fees for apprentices whose parents or guardians derive their means of living mainly from farming in Ireland are proportional to the aggregate tenement valuation of their holdings, as follows:—

Where the aggregate valuation does not exceed £20, £3 per Session;

Exceeds £20 but not £40, £6 per Session;

Exceeds £40 but not £100, £10 per Session;

Exceeds £100, £15 per Session;

Apprentices not included in foregoing classes, £20 per Session.

The farm at Clonakilty contains about 350 acres, and is rented by the Department from the trustees in whose care it is at the rate £280 per annum. The Department spent for buildings and equipment about £2,500, and the net annual maintenance costs the Department from £1,700 to £1,800. The Farm Superintendent expected the farm revenue to exceed the farm expenditure by £400 per annum. The latter did not include the expense of management, or the salaries of the instructors.

Students and their Work.

30 students are received per annum, 3 of whom are kept on from the previous year. The course is for one year. During the summer the students give practically their whole time to outside farm work, except in weather unfit to be out. Taking the course as a whole, about one hour per day is devoted to class-room instruction. There is no laboratory. There are specimens for illustration purposes, and also a good working room with benches and tools, where students are taught to do simple carpentering.

Of the 27 first-year students in attendance, 21 had previously taken one of the Winter Agricultural Courses of 16 weeks, such as are referred to under a subsequent heading.

The farm had the appearance of being well managed. The students had excellent opportunities for observing the best processes in farm practice, and for being trained into ability to do the work well themselves.

It occurs to the Commission that Agricultural Stations similar to this would be a benefit and advantage, particularly in those districts of Canada where the settlement is new, and where the working farmers and young people have not had opportunity of becoming skilled in farm work and have had little experience in farm management. In the older districts, where Illustration Farms have been selected, a development which would not be costly, and would likely be of decided benefit, might come through places being arranged for from 3 to 10 farm apprentices on each suitable Illustration Farm.

SECTION 4: ITINERANT INSTRUCTION IN AGRICULTURE.

The schemes of Itinerant Instruction constitute part of the County Schemes for Agricultural Instruction carried out by the County Committees of Agriculture and the Department co-operating together.

The Department's scheme of instruction in agriculture was again put into operation by each County Committee in 1909-10. 36 instructors were employed, there being no increase in the number at work during the previous year. The County Committees of Cork, Tyrone and Wexford each employed two instructors.

The number of instructors in agriculture employed each year under this scheme, since the establishment of the Department, may be observed from the following table:—

Year.	No. of Instructors at work
1900-1	3
1901-2	10
1902-3	10
1903-4	17
1904-5	21
1905-6	23
1906-7	30
1907-8	34
1908-9	36
1909-10	36

During the season, from October to March, 826 lectures were delivered at 390 centres, at which close on 41,000 persons attended, giving an average of about 50 for each lecture. These figures show a cons derable decrease when compared with those for the years 1907-8 and 1908-9, owing to the fact that 24 of the instructors were employed in teaching Winter Agricultural Classes as compared with 10 in 1907-8 and 19 in 1908-9. The instructors paid 13,531 visits to farms, an average of 377 visits for each instructor. Upwards of 671

field experiments and 2,036 demonstrations were conducted by the instructors. These experiments and demonstrations are distinct from the demonstrations conducted in congested districts by the Department's overseers.

Every instructor, except two, was engaged for some weeks during the summer in judging under the Department's scheme of prizes for cottages and small farms, in a county other than that in which he was employed as instructor. The instructors also assisted in work under the Department's dairy cattle registration scheme, and in performing certain duties in connection with the Fertilizers and Feeding Stuffs Act.

Itinerant Instructors.

At the outset, schemes of itinerant instruction in Agriculture, Horticulture, Poultry-Keeping and Butter-making were proposed by the Department for adoption by County Committees of Agriculture. These schemes were put into operation by the majority of the Committees as soon as qualified persons were available to take up the instructorships. The schemes have remained substantially the same throughout the decade, but have been revised each year and their scope extended in directions pointed out by experience gained at the work. The number of instructors has increased steadily from year to year. At the close of the year under review each county committee of agriculture, with one exception, had several schemes in operation. In the great majority of counties all four schemes were working, and in several counties a second and even a third instructor was employed under one or more schemes. The number of instructors at work was as follows:—

Instructors in Agriculture	36
" Horticulture and Bee-Keeping	36
" Poultry-Keeping	33
" Butter-Making	33
Total	138

The total shows an increase of 10 as compared with the previous year.

Besides the instructors employed by County Committees of Agriculture under the schemes mentioned, there are several Agricultural Overseers and Assistant Overseers employed directly by the Department to carry out the special schemes of agricultural development in the poorer districts of the West. The Department were enabled during 1909-10—owing to the additional funds for agricultural work in congested districts provided by the Irish Land Act, 1909—to increase by 13 the number of Assistant Agricultural Overseers. 43 Overseers and Assistant Overseers are now at work in these districts.

Winter Agricultural Classes.

The Agricultural Classes are held during the four winter months, and provide from 30 to 40 days of instruction. The minimum daily duration of a class is 4 hours.

The scheme of Winter Agricultural Classes in 1909-10 was adopted by County Committees of Agriculture in 26 counties out of a total of 33 in Ireland. 70 classes were formed under the schemes and 1,166 students were admitted. As compared with previous years, there was an increase of twenty classes, and of almost 300 students

These classes are directly helpful to young farmers who are to continue working at their farming occupations. They also provide an excellent beginning in systematic instruction for young farmers who have natural aptitudes for service as instructors and leaders to begin their course of preparation. The instructors and others in charge are always on the look-out for promising young men and women to be guided towards further preparation for public service in connection with the Department and its work.

The following tables indicate the extent to which Agricultural Classes have been availed of in each year since their inception:—

Year.	Number of Classes.	Number of Students.
1902-3	2	44
1903-4	7	161
1904-5	18	317
1905-6	25	422
1906-7	28	449
1907-8	33	529
1908-9	50	875
1909-10	70	1,166

Horticulture and Bee-keeping.

The schemes of instruction in horticulture and bee-keeping were adopted in every county except two. The Tipperary (S.R.) County Committee, however, made provision for instruction in horticulture only.

Of the 36 instructors employed during the year, 29 were qualified to give instruction in horticulture and bee-keeping, 4 were qualified in horticulture only, and 3 in bee-keeping only. In 3 counties separate instructors were employed for horticulture and for bee-keeping respectively.

An instructor's duties under this scheme, although confined mainly to giving practical demonstrations in gardens, orchards, etc., in the planting, pruning, grafting, and spraying of trees, etc., include the delivery of lectures to a limited extent. During the year 330 such lectures were given at which there was an average attendance of 47, and the number of visits and demonstrations at gardens, orchards and selected plots amounted to 25,589.

The number of demonstration plots established in 1910 in connection with this scheme was 286 as compared with 270 in 1909—the plot holders evincing a keen interest in the cultivation of their plots. The Department hope that in future all such plots will be established principally on labourers' holdings.

As in previous years the Committees again made provision for assisting farmers and others in procuring reliable forest and other trees. The Department inspected the stocks of the principal Irish nurseries, and furnished the several County Committees with particulars of the classes of trees approved at each nursery. The Committees then usually invited tenders for the supply of trees

to residents in the county. All trees were purchased subject to the approval of the instructors, and by this means the applicants were protected from having unsuitable trees supplied to them.

Poultry-Keeping.

Schemes for encouraging improvement in the poultry-keeping industry were in operation in every county save Dublin. 33 instructors were employed, 14 of whom were also engaged for a portion of the year in connection with the scheme of instruction in butter-making.

The scheme of tutorial and practical classes was adopted by 22 County Committees. The instruction at these classes, which covered a period of 12 months, is essentially of a practical nature and includes discourses aided by demonstrations followed by practical and class work in which the pupils take part. Visits by the instructor to the poultry-runs of pupils and others in the district is also an important feature of the work. The instructors gave 588 lectures, at which there was an average attendance of 56 pupils. In addition, 1,522 classes were held with an average attendance of 11, and 10,198 visits were made to poultry-keepers.

Butter-Making.

The scheme of instruction in butter-making was continued during 1910. The Committees of 26 counties adopted the scheme and employed 33 instructors, of whom 14 were also engaged during a portion of the year giving instruction in poultry-keeping.

In addition to making 7,703 visits to private dairies, the instructors gave 128 lectures, and conducted 4,093 dairy classes in 305 centres where courses (extending from 2 to 4 weeks) were held, with an average attendance of 8.

The following statement shows the number of counties in which instructors have been employed each year since the inception of the scheme:—

1900-1	1
1901-2	4
1902-3	11
1903-4	18
1904-5	22
1905-6	24
1906-7	24
1907-8	24
1908-9	26
1909-10	26

SECTION 5: AGRICULTURAL SCHEMES.

Full information regarding each of the Agricultural Schemes agreed upon between the Department and the Board is published and made available to all concerned or interested.

There are 14 main schemes in regard to which the Department co-operates with the County Committees. Altogether 131 Instructors and Instructresses

are employed permanently in connection with these schemes. Information is here given on schemes, typical of the others and useful for Canada, such as Scheme No. 9, Instruction in Agriculture; Scheme No. 10, Winter Agricultural Classes; Scheme No. 14, Instruction in Horticulture and the Management of Bees. Certain other schemes, which relate to horses, cattle, swine, subsidies to agricultural and other societies, prizes for cottages and small farms, are not considered to be within the scope of this Report.

Duties of Committees.

It is the duty of the County Committee to select suitable centres at which classes are to be held, and to appoint at each centre a Local Committee, with an Honorary Secretary, who will be responsible for the local arrangements necessary for the proper carrying out of the work, and who will be required to comply with the conditions set out. The Local Committe at each centre should undertake to have posters and handbills, which will be supplied by the Secretary of the County Committee, effectively displayed in the neighbourhood of the centre. Copies of these posters and handbills should be forwarded to the Department at least a week prior to the commencement of each class. The Local Committee is responsible for securing a lecture-room, and for the heating, lighting, etc. of the same. The Local Committee should appoint a representative Chairman for each lecture, and be responsible for distributing the syllabus prepared by the lecturer.

In selecting centres, the County Committee should have particular regard to districts in which lectures or classes may not have been held in previous years.

Instruction in Agriculture (Scheme No. 9).

The Department are prepared to approve of the appointment of at least one properly qualified Instructor in Agriculture for each county in Ireland, his remuneration, except in special cases, not to exceed £200 per annum (inclusive of maintenance and hotel expenses) in addition to travelling expenses.

The duties of the Instructor, who should take every opportunity of discussing with farmers matters affecting their interests, are:—

(*a*) to conduct such experiments and demonstrations in spring and summer as may be approved by the Department, to select suitable land for the purpose—to supervise the sowing of the seeds and manures, and the keeping of the plots free from weeds—to weigh the produce, tabulate the figures and prepare a report on the results;

(*b*) to deliver lectures on agricultural subjects, such as soils, manures, seeds, pastures, crops, and their cultivation, and the breeding, feeding, and management of live stock, especially of dairy cattle;

(*c*) to visit farms;

(*d*) to reply to letters from farmers seeking information;

(*e*) to advise farmers (i.) how they can take advantage of the Department's Seed Testing Station, (ii.) as to the planting of forest trees for shelter and ornament, (iii.) how they can best avail themselves of all approved county schemes, and (iv.) how they may take advantage of agricultural co-operation;

(*f*) to make known the provisions of the Fertilizers and Feeding Stuffs Act, and of the Destructive Insects and Pests Acts;

(*g*) to furnish to the County Committee and to the Department, as may be required, reports on the progress of his work and on matters relating to the agricultural industry of the county; and

(*h*) generally to give his whole time to the work and to do all in his power to further the interests of agriculture in the county.

The Instructor may also be required (*a*) to assist in the teaching of winter agricultural classes, (*b*) to assist in carrying out the provisions of the scheme for the registration of dairy cattle, by the weighing and testing of milk, etc., and (*c*) to act as judge in connection with the scheme of prizes for cottages and small farms in a county other than that in which he acts as Instructor.

The Instructor shall make arrangements to have experimental and demonstration plots in his section or circuit and during the summer months meetings of farmers should be held at these plots to discuss the objects, etc., of the plots. In selecting sites for plots preference should be given to localities in which agricultural classes have been held during the preceding winter.

During the winter months, viz., from the beginning of October to the end of February, the County Committee should arrange for one or more lectures in each circuit, on the results of the experiments.

The County Committee may make such regulations as they think necessary with regard to—(*a*) the maximum age of students to be admitted to the classes; and (*b*) the admission to classes of students who have previously attended similar classes, provided that admission to an elementary class shall not be approved in the case of any student who has attended two previous classes.

The classes shall be confined to young men over 16 actually engaged in farm work in the county. Not more than 24 students shall be admitted at any centre and if the number of students eligible is less than 10, no class is held, but with approval of the Department, the County Committee, if a sufficient number over 16 is not available, may admit young men over 15.

No fee will be charged for the course. Students must provide, at their own expense, note books and other stationery, as directed by the teacher.

Students who reside beyond a radius of 4 statute miles from the class centre will, at the end of the course, be allowed the cost of third-class railway tickets, or one penny for each mile travelled by road, provided that their attendance and progress are regarded by the Department as satisfactory. No student will be regarded as having attended satisfactorily who shall not have been present at five-sixths of the meetings of his class, unless his absence shall have been due to illness or other unavoidable cause.

SYLLABUS OF THE COURSE.

Brief sketch of origin and formation of soils. Conditions influencing fertility. Soil improvement by draining, liming, etc.

Study of a plant, and the function of roots, stem and leaves; modification of these organs. Elements of plant food and their relative importance from an agricultural point of view. Conditions affecting the development of plants. Examination of the habits of growth and duration of the principal crops and weeds found on the farm, and the practical application of this knowledge.

Farmyard manure: its storage and application. Organic and artificial manures. Composition, description and identification of artificial manures; their valuation, time and manner of application. Mixing manures. Fertilizers and Feeding Stuffs Act.

Rotations. Cultivation, seeding, manuring and harvesting of the principal farm crops. Forage and Cattle crops. Study of the commoner insect pests and fungoid diseases of crops.

Characteristics, duration and adaptability for various purposes of grasses and clovers in farm practice. Identification of the different species and varieties.

Identification of farm seeds and the commoner impurities and adulterants. Germination and purity tests, how performed; the inferences to be drawn therefrom. Change of seed. Grass seed mixtures. Weeds and Agricultural Seeds Act.

Care and management of various classes of farm stock, with special reference to breeding, feeding and housing. Principal breeds of live stock and their characteristics.

Constituents of foods; their respective functions and value in animal nutrition. Valuation; manurial value. Description and uses of home-grown and purchased feeding stuffs. Impurities and adulterants. Rations for various classes of farm stock. Methods of using foods.

Secretion of milk; composition; conditions influencing the quality and quantity of the milk yield. Care and treatment of milk for new milk trade or butter-making. Cream ripening. Milk records. Respective merits and demerits of the several systems of dairying. Summer and Winter dairying.

Rules for estimating the areas of the principal geometrical figures met with in chain surveying and farm calculations. Field book, method of entering measurements; calculation and computation of areas. Practical work with the chain in the field. Plotting from the field book to given scales. Location of drains, etc., on the plans for future reference.

Method of keeping a diary, cash book, and a record of credit transactions. Farm valuations and stocktaking. Balance sheets: their interpretation. Estimates of the cost of various farm operations, etc.

A course in Veterinary Hygiene intended to indicate the treatment to be adopted in cases of accidents to or simple ailments of farm stock, and to enable students to carry out intelligently the instructions of the Veterinary Surgeon. To this end demonstrations regularly follow class work.

SESSIONAL PAPER No. 191d

Winter Agricultural Classes (Scheme No. 10).

The County Committee may employ as teacher for Agricultural Classes for four days per week, the Itinerant Instructor in Agriculture who has previously worked in the county, if approved by the Department. He is to devote the remaining two days per week to duties in connection with the scheme of itinerant instruction in Agriculture. Or they may employ an approved teacher or assistant instructor who would devote his whole time to the classes.

The aim of the instruction is to impart such knowledge as is capable of direct practical application to farm work. The subjects taught will be:—Soils, tillages, manure (natural and artificial), seeds, grasses, weeds, treatment of pasture, cropping, management of live stock (including winter dairying), valuation of manures and feeding stuffs, simple farm account keeping, mensuration, elementary chain surveying, and elementary science explanatory of principles underlying ordinary farm practice. As far as possible the lesson should be illustrated by practical demonstrations.

At each centre special attention will be devoted to farm calculations in connection with cost of growing crops or raising stock, with direct reference to the practice prevailing in the district.

The County Committee may arrange for a few outdoor demonstrations in the planting and after-treatment of fruit trees, to be given to students by the County Instructor in Horticulture, but no lectures on horticulture shall be given.

In order to bring the classes within the reach of as many young men as possible, it will be necessary for the teacher in each county to give instruction at two or three centres, at each of which he shall attend for *three* or *two* days weekly, during a period of about 16 weeks, from November to March. Unless in exceptional circumstances, centres at which agricultural classes have been held previously shall not be selected under this scheme.

In fixing the days of the week on which the classes are to be held at any centre, the County Committee should have regard to the dates of fairs and markets, as well as to any local circumstance which might interfere with attendance of students on certain days.

Instruction in Horticulture and the Management of Bees (Scheme No.14).

The Department are prepared to approve of the appointment of at least one properly qualified Instructor in Horticulture and Bee-keeping for each county in Ireland at a salary of £2 per week.

The Instructor's duty is to give demonstrations and, if approved, to deliver lectures on horticultural subjects, such as soils, manures, vegetable, fruit and flower cultivation, plant diseases, and insect pests—to visit gardens and orchards, and give practical demonstrations on spraying, planting, pruning and grafting of fruit trees—to conduct such experiments and other demonstrations in the spring and summer as may be approved by the Department—to select suitable land for this purpose—to supervise the sowing of the seeds and manures, and the keeping of the plots free from weeds—to give instruction in the principles and practice of modern bee-keeping—to deal with diseases of bees, plants, and trees—to advise farmers, cottagers, and others interested in land, as to the planting of trees, etc., for shelter and ornament—to reply to letters from those seeking advice on horticultural and bee-keeping subjects—to give practical outdoor demonstrations to students attending winter agricultural classes—to report to the Department and to the County Committee on the progress of his work either weekly or otherwise, as may be required: and generally to give his whole time to the work and to do all in his power to further the interests of horticulture and beekeeping in the county.

He will be required to carry out such duties as may be assigned to him in connection with any Orders issued by the Department under the Destructive Insects and Pests Acts, reporting to the County Committee names and addresses of persons in possession of bushes on which he has detected, or has reasonable grounds for suspecting, the existence of any di ease or pest referred to in such Orders; also all cases of foul brood which may come under his notice; and shall act as Inspector of the County Committee for the purpose of Bee pest prevention regulations.

For the purpose of this scheme, the county shall be divided into circuits (except where the Instructor gives instruction in Bee-keeping only, in which case he will attend at centres applying for his services). He shall give outdoor demonstrations for 4 weeks in each circuit; visit gardens, orchards or apiaries in the district and give such information on practical subjects as the circumstances of the case may suggest.

Each demonstration will be followed by a discussion, during which persons interested in horticulture and bee-keeping will be invited to ask questions. Where a course of lectures has already been given a new syllabus should be presented. The County Committee may purchase fruit, forest and other trees, shrubs or plants in bulk and re-sell them, at cost price including carriage, to farmers and other residents in the county. As trees and plants infested with disease have been imported into Ireland. County Committees must invite from Nurserymen tenders for the supply of trees, etc., to be guaranteed free from disease, and before acceptance submit such tenders to the Department for examination on or before January 1st, each year. The horticultural demonstrations should commence early in autumn and be continued throughout the whole year.

In each circuit one demonstration plot may be provisionally selected for the purpose of growing vegetables, fruit, and flowers, and showing improved methods of cultivation, but no new plots shall be selected in a county if a sufficient number of suitable plots have been established in previous years.

New plots a quarter of an acre in extent are recommended. They must not be less than one-eighth of an acre and must be established at a convenient center adjacent to a main road.

The aspect of each plot and the nature of the soil must be suitable for vegetable growing and fruit cultivation. Necessary improvements, such as drainage, must be carried out, and when required, farmyard manure must be supplied by the plot owner without expense to the Committee. The owner of the plot must sign an undertaking to continue the plot for three years. The necessary labour must be given gratuitously by the persons providing the plots—the produce to be their property.

The cost of trees, etc., required for planting a new plot must not exceed £2.

(The Department recommends that allotments attached to labourer's cottages should be selected for the establishment of new demonstration plots subject to the foregoing conditions.)

SECTION 6: AGRICULTURAL OVERSEERS.

Besides Instructors employed by County Committees of Agriculture under such schemes as have been mentioned, there are a number of Agricultural Overseers and Assistant Overseers employed directly by the Department to carry out the special schemes of agricultural development in the poorer districts of the West.

The Irish Land Act of 1909 extended the area scheduled as congested, and provided for the payment to the Department of a sum of £19,000 per annum for the purposes of agricultural development in the districts scheduled as congested. In 1910 there were employed in connection with the Department's special schemes of agricultural instruction in the congested districts, 5 Agricultural Overseers and 38 Assistant Overseers.

The work which they carry on is generally illustrated by what follows regarding the work for "colonists" at Castlerea. They arranged for the establishment and supervision of not less than 9,579 special demonstration plots in the congested districts. These were demonstrations in the growth of potatoes, oats, barley, wheat, rye, turnips and mangolds, garden vegetables and grass, and also in the use of artificial manures in connection therewith.

They also encouraged the occupiers to spray their potato plots, and transacted for the Department the business of supplying hand-spraying machines to occupiers of small holdings in districts where such articles were not readily procurable through local agencies at reasonable prices. During the 4 years 1907–10, 5,946 hand-spraying machines were sold in that way. The Overseers also undertook the repair of spraying machines that were out of order, the necessary repair parts being supplied by the Department at cost price. During the year, 5,080 machines were thus repaired.

Work in Congested Districts.

The Commission visited a locality about three miles distant from Castlerea, to see a number of new holdings created under recent Land Acts, and to see something of the work of agricultural instruction for such "colonists".

In this area about 200 holdings of about 30 acres each had been created. The land formerly was part of a large pasturage area, and under the present holders is being tilled to a very considerable extent. One of the small farmers had 12½ acres of his holding under forage or hoed crops. On the whole, the crops were of good quality and evidently well put in.

The local Agricultural Overseer spends his whole time among about 150 holders, there being about 50 holdings uncompleted at the time of the visit of the Commission. The Overseer helps them to begin the use of new implements and machines, such as chilled ploughs, cultivators, mowers, etc. The "colonists" were also given some assistance by the Department to enable them to obtain such machinery. When a new machine was to be started or put to use, a number of the neighbouring farmers would come to one place to learn all they could. When there was no such work to do, the Overseer would visit about 10 farms daily, offering counsel, answering questions and helping the people to understand the difficulties of their occupation, and how to meet them successfully. This Overseer had attended one Winter Agricultural Course of 16 weeks, and formerly managed a large farm for some four years in the County of Cork. He began his work as Overseer at a salary of £65 a year, and is now receiving the maximum for that class, which is £100 a year. The Overseers are not used by the Department to conduct Winter Classes, to hold meetings or to give any other instruction than that imparted to the farmers on their own places. Those who are engaged for the higher posts are required to be trained further, usually at Albert Agricultural College, and for the highest posts at the Royal College of Science.

Suggestions for new Canadian Settlements.

It appears to the Commission that the employment in Canada of Agricultural Overseers and Special Instructors for districts where settlement is just going on would be most advantageous. Farmers would have someone to advise them how to manage most advantageously with the fewest mistakes and the least risk of loss under the new conditions. They could be shown how best to use new kinds of machines and implements. The prevention of waste of time, disappointment from partial failure at first, and direct losses, would all accrue to the credit of a well-administered system of Agricultural Overseers and Instructors and to the immense advantage of the localities. Such overseers should have had successful experience in actual farm work and management, and have sufficiently advanced agricultural education to enable them to explain correctly and clearly the underlying principles of the ordinary farm operations.

SECTION 7: INSTITUTIONS FOR WOMEN AND GIRLS.

THE MUNSTER INSTITUTE, CORK.

In close association with its work of agricultural education for boys and men, the Department has an extensive programme of agricultural education for girls and women.

It maintains the Munster Institute at Cork more particularly for the training of teachers for agricultural schools for girls, and of county instructresses in poultry-keeping and butter-making. Four teachers are employed. Four sessions are held at the Institute during the year, and in 1909-10 were attended by 204 pupils, including those admitted to the second, third or fourth sessions. At the end of the year there were 213 applicants waiting their turn for admission. 56 pupils can be admitted at each session. In 1909-10 ten students passed their final examinations, including two instructresses who attended supplementary courses in poultry-keeping and butter-making respectively. Eight students of the Institute obtained employment in connection with the Department's work, and the number of past students so employed amounts to 52.

The outstanding features of the Institute on the occasion of the Commission's visit were the earnestness and enthusiasm alike of the Staff and Students.

The classes at the Institute are open to female students only.

Course of Training.

The course of training includes:—

(1) The practice of dairy-work. The treatment of milk and the making of butter on a large and on a small scale with the most modern machinery and utensils, as well as with the appliances generally used in farm dairies.

(2) Instruction in the feeding and management of cows, calves and pigs; in the keeping of small gardens and in the manipulation and care of bees.

(3) Instruction in poultry-keeping. Breeds; their suitability for different purposes and different localities; housing, feeding and management; grading and packing of eggs; hatching and rearing of chickens ; fattening, killing, plucking, trussing and preparing for market.

(4) Instruction in domestic work, embracing plain cookery, plain needlework, laundry work, and home nursing.

The fee for tuition, board and lodging during one term is £3: 3s., payable on entrance.

Four terms, each of about eleven weeks, commencing respectively in January, March, July and October, are held in each year.

Conditions of Entrance, Study, Etc.

Intending students must be at least 17 years of age on date of admission. They are required to produce certificates of good health and character and to show that they have received sufficient general education to enable them to follow the course.

ULSTER DAIRY SCHOOL, COOKSTOWN.

The Department also maintains a Dairy School at Cookstown in the Province of Ulster, which is conducted on the same lines as the Munster Institute, with the exception that finishing courses for instructors and teachers in training are held at Cork only. Students of the Ulster Dairy School who qualify for these courses are transferred to the Munster Institute at Cork.

Four sessions of the School were held in 1909-10, and 120 students attended, a large proportion of them coming from counties outside the Province.

SCHOOLS OF RURAL DOMESTIC ECONOMY.

There are nine other Schools of Rural Domestic Economy in Ireland. Some of these are residential and others are for day classes.

The particular object of the Department in promoting this type of instruction in rural districts of Ireland is to inculcate respect and affection for the home and the countryside, and thereby counteract the tendency to look down upon farm work and abandon rural life. The training aims at the making of efficient housewives. It does not aim at the preparation of girls for domestic service, or for the factory or the shop.

The School at Loughglynn.

The School of Rural Domestic Economy at Loughglynn, Co. Roscommon, was visited by the Commission. The School is located about six miles from Castlerea. When the land was divided into small holdings under the Land Purchase Act, the manor house and small farm surrounding it became the property of an order of Nuns, the Franciscan Missionaires of Mary. The school was established in order to provide the women and girls of the neighbourhood with such practical training as would enable them to increase the comfort of their homes and improve generally the conditions under which they live.

The school takes pupils of about 14 or 15 years of age from the homes of the surrounding farmers. Day pupils only are received. They come between 9 and 9.30 in the morning. In winter they continue until 4 o'clock in the afternoon; in summer until 6. All come from within six miles of the school. The pupils receive practical instruction in Cooking, Sewing, the Care of Milk and the Making of Butter and Cheese, and in Poultry-keeping and Gardening. They also have an opportunity of acquiring some knowledge of Embroidery and Weaving. They are taught the small home industries such as mat-making. While the object of the school is to teach the daughters of farmers to be good housekeepers, we learned that as a matter of fact many of the girls went to situations, and many had gone to America.

As an accessory the school owns 25 outfits for spraying potatoes, and rents them to farmers in the vicinity at a shilling per day. Teachers of the school give the farmers instruction in how to prepare the mixtures and use the spraying outfit.

The Commission was impressed most favourably by the trim and worklike appearance of the pupils, and the evident effect upon them of spending one or two years in attendance at such a school. There were altogether 60 pupils in attendance.

The nuns, who are also the teachers of the school, visit the homes of the girls, and it is said to be a matter of common knowledge that the school has had a marked influence upon the improvement of the homes in the vicinity.

CHAPTER XXIII: THE CO-OPERATIVE MOVEMENT.

The co-operative movement in Ireland preceded the establishment of the Department of Agriculture and Technical Instruction. Its development has been concurrent with the extension of the work of the Department. The progress in the spirit, the principles and the methods of co-operation in rural communities owes nearly everything to the work of the Irish Agricultural Organization Society. Consequently it has been thought expedient to include a brief statement regarding the work of that Society.

Somewhat cognate with that has been the consideration of the question of Agricultural Credit. The Report of the Recess Committee (1896) contains a concise statement of the origin and work of the Raffeisen Banks. The Report of the Department of 1909-10 presents the present view of the Department concerning Agricultural Credit. In view of the suggestiveness of the work in Ireland in connection with these matters, brief statements are here presented concerning the three, viz.—Irish Agricultural Organization Society, the Raffeisen Banks, and Agricultural Credit.

SECTION 1: AGRICULTURAL ORGANIZATION.*

Why It Was Necessary in Ireland.

There is a great magic in property, and within the limits of a farmer's knowledge, ownership of his land does set his thought on better farming of that land. But the Irish farmer was suffering from economic troubles of another kind which he could not diagnose. Prices of produce were falling, and he did not know why, and it became obvious to some observers that even if the Irish farmer paid no rent at all he would still remain miserably poor. The foreign farmer sold in Irish markets and flourished on the prices he received. Both had the same markets. One set of producers grew prosperous; the other set, nearer to those markets, could not make farming pay. It was not merely a question of rent, because the foreign farmer often paid as much rent as Irish farmers did. It was a question of business organization. The modern world had turned away from the old methods of doing business.

Wholesale provision dealers wanted to buy in a wholesale way as well as sell in a wholesale way. They could not be bothered with the few pounds of butter made by the small farmer or with his wife's weekly dozen or so of eggs. The expense of collection was too great. They wanted to buy butter and eggs by the ton, and they wanted to deal with agricultural producers who could supply them with large quantities of farm produce graded in the way they wanted,

*Material largely drawn from "The Work of the I. A. O. S." by Harold Barbour.

always uniform in quality, so that they in their turn could sell it with the same confidence as a first-rate manufacturer of watches can advertise his timekeepers as always being true to the minute. The foreign farmer met the wholesale provision merchant. The foreign farmer had organized his business. In association with other farmers he bought, manufactured, and sold. He studied the markets, met their requirements, and got the trade. The Irish farmer knew nothing about this business organization of his rivals, and his business was going from bad to worse.

THE ORIGIN OF THE I.A.O.S.

"The foreign farmer had recognised that combination was just as necessary in farming as in any other business. He did not form companies. Under the company system capital came into conflict with the producers, and capital invariably predominated. Capital was not out for the sake of its health, but to make more capital, and this did not suit the farmers, whose business was exploited. It became gradually recognised over Europe that the co-operative system was the right one for farmers to adopt when combining for business purposes. It was found, too, that these co-operative combinations brought living and lasting bonds between the individual and his associates. Thus in a society the example of the most progressive member rapidly became the practice of the whole society, and any advice or instruction the State offered was more easily assimilated and put into practice by the association than it was by unorganised farmers with no bond of union. It was found where farmers combined they became very progressive, and where they did not combine they were backward and ignorant. It is easy to spread knowledge when pupils gather in a school. It is difficult or impossible to teach where there is no grading of pupils and the children remain at home. The co-operative associations placed the most progressive farmers at their head, and the whole district soon found themselves committed to swift progress and development.

SIR HORACE PLUNKETT'S WORK.

"The first person to apply these ideas in Ireland was Sir Horace Plunkett. He returned in 1889 to Ireland from America, where the advantage of combination in business has been perhaps unduly pressed and where little businesses are swallowed up until the Trust is all in all. But the advantages of combination were undeniable, and he himself started a crusade in the country and worked for some years with only one or two associates preaching the gospel of agricultural co-operation in the face of much opposition and chilling apathy. But the doctrine which is economically sound finally makes way. Slowly, very slowly, the first societies started like bathers unwilling to take a plunge into icy water; but those who did adventure found it paid, and then the demands from the country became so numerous that in 1894 the Irish Agricultural Organisation Society was formed as a necessary central body, first to establish co-operative societies among the farmers and then when established

to advise and guide them. The establishment of a central body was absolutely necessary. Just as the duties of parents do not end when they have brought children into the world and they are compelled to bring them up to manhood and womanhood, so it was not sufficient to establish societies and leave them. There was an immense amount of organising to do to bring the movement up to the point of efficiency of continental societies,and the I.A.O.S.had to undertake this work. Since its formation the I.A.O.S. has had a chequered career. At first it was mainly supported by Sir Horace Plunkett's friends, and very real friends to Ireland they were. Later it was the recipient of an annual grant from the Department of Agriculture which also owed its existence to Sir Horace. Now the organising body is dependent altogether on subscriptions and affiliation fees from the societies it has formed and on the subscriptions which still come from those who welcome a non-political and very practical way of doing something to bring peace and prosperity to the country. On its work the I.A.O.S. has spent over £100,000, and never was money better spent in Ireland. In the co-operative creameries alone it is admitted that the additional annual *gain* to the farmers through this organisation is now £400,000 a year. Regarded as a national investment this one result alone more than justifies the expenditure of the I.A.O.S. The total trade of the movement since it began is over £20,000,000. The annual turnover of the societies is considerably over £2,500,000, and it increases year by year. We believe few people will differ from us when we say that this £100,000 spread over 20 years was well-spent money.

Agricultural Banks.

"Profitable farming, like any other business, necessitates the use of credit at certain times and seasons. The Agricultural Bank is the form of combination which has proved to be the most helpful way of dealing with farmers' credit. Previous to the introduction of these banks the farmers used to run a credit with his local trader, a system which was bad for the farmer, because he lost his independence and sometimes his farm. The I.A.O.S. has organised about 300 agricultural banks. These are associations of farmers who pledge their joint credit for the safe-keeping of any money lent to them or deposited. On this joint guarantee they borrow a large sum of money sufficient for the needs of their members at a low rate of interest and lend it out again to these members at a slightly increased rate. Hitherto it has been found possible to borrow money at from 3% to 4% and to lend it out at the popular rate of one penny per pound per month (less than 5%). From his agricultural bank the farmer can borrow in accordance with his needs. Money is only lent for reproductive purposes sanctioned by the Committee of the Society. Interest is not deducted beforehand from the loan, and the length of time for which the money is advanced is determined by the purpose of the loan. So is the method of repayment. A man borrowing money to buy a milch cow will be getting his cheque every month from the creamery, and so he can repay by instalments. Another farmer buying young pigs or fertilisers will have to wait six months, maybe, before his beasts are ready or his crops are sold, and he will repay in one sum when he has made

his profit out of his loan. The peculiar needs of farmers are met in every way. The societies serve a very useful purpose in country districts, taking from the wealthy their superfluous capital, for which they pay a fair interest, and lending it out again to those who require it for reproductive purposes. The money of the district is in this way kept in the district, where it is always producing more money and doing good. The farmers also are instructed in the true use of credit, which is to borrow money to make more money and not merely to fill up some gap by throwing good money after money that is gone. This system, introduced into Ireland by the I.A.O.S., is the system of credit for farmers which is most widely used over Europe."

SECTION 2: RAFFEISEN BANKS.*

Raffeisen banks were introduced in 1886, when two were established, having collectively 54 members, in the Duchy of Austria, and in the following year the local Diet voted £300 to aid in this purpose. So rapid has been their growth that the Duchy now counts 396 of these banks. Moravia instituted one in 1887, and has at present 85. Among the mountaineers of Tyrol this form of banking has met with, relatively, the most complete development, no fewer than 122 of these institutions having been established between 1889 and 1894. The official returns show that in 1895 there were 994 Raffeisen banks in the empire; but the complete balance-sheets come no later than December, 1893, showing as follows:—

Year.	Banks.	Members.	Assets £ stg.
1886	2	54	360
1890	182	9,670	132,000
1893	565	35,470	410,000

At present it is estimated that the existing banks have 60,000 members, and assets exceeding £700,000 sterling. The programme and statutes differ very slightly in the various provinces, the object being to lend small sums to farmers at longer dates and lower interest than is usual with banks.

A dozen neighbors can start a bank, with a paid-up capital of £20 or more; each member takes one or more shares, and pays 2s. a-month per share until the whole capital is made up. The shares are usually £1 each; but in some few cases £2. None but neighbours can be shareholders, and nobody can hold more than 25 shares; the voting power is alike for all—one man one vote. No person who has been bankrupt or convicted of a felony, or who is interested in any other bank, can be a shareholder. Persons who wish to become shareholders must apply to the board of managers, who will admit or reject candidates at pleasure. Women may be shareholders, but cannot be elected to the board of management. When anyone wishes to retire from the bank, the managers return him the exact amount of his capital: he cannot sell his shares to an outsider. The managers receive no salary, except the bookkeeper—usually the village schoolmaster—who gets £1 a month for his trouble. The board

*From the Report of the Recess Committee (1896).

must meet once a month, at least, the village priest being often the chairman. Each shareholder is liable in the whole amount of his fortune for any debts of the bank, but the transactions are so small that this causes no uneasiness.

Average of Liabilities.

In 1893 each bank had an average of 63 members, with liabilities amounting to £900, that is £14 each: the average gross profits were £19 per bank, from which had to be deducted £12 to the school-master for keeping the books, leaving a net profit of £7 sterling. The following table shows the proportionate amount of advances to farmers, and the terms for which loans were made:

Amount.	Ratio.	Terms.	Ratio.
Under £8	23	Under 6 months	32
£8 to £32	49	6 to 12 months	28
Over £32	28	Over 12 months	40
	100		100

The average amount of a loan is £13, the maximum fixed by law £128. The average term is 14 months, and no loan can be for longer than 4 years. Raffeisen banks are found chiefly in villages where the population may be between 600 and 2,000 souls. They receive deposits at rates varying with locality from $3\frac{1}{2}$ to $4\frac{1}{2}$ per cent., and charge interest on advances between $4\frac{1}{2}$ and 5 per cent.; the object being to make no profits, but to give depositors as high interest as possible while lending to borrowers at a minimum rate. The returns of 672 banks in 1894 showed as follows:—

Province.	Banks.	Deposits, £.	Loans, £.
Austria	396	355,000	250,000
Tyrol	122	140,000	85,000
Moravia	85	102,000	96,000
Bohemia	69	20,000	16,000
4 Provinces	672	617,000	447,000

The Austrian Government makes a reduction of stamp-duty on all transactions of these banks, and in order to multiply them all over the Empire the several Diets vote annual subsidies to provide iron safes, books, etc., besides employing Wander-Lehrers to go about among the farmers and preach to them the adoption of every form of co-operation, especially Raffeisen banks. In this way the movement has progressed so rapidly that in the last two years no fewer than 430 new banks were established. It is admitted on all hands that they prove an incalculable blessing to the farmers, that they are worked almost free of expense, and that in all cases where the parish priest and school-master lend their aid (for a purpose so strongly recommended by the Catholic Congress of 1890) these banks are established without the least difficulty.

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SECTION 3: AGRICULTURAL CREDIT IN IRELAND.

The Department for some time have had under consideration the question of agricultural credit available for the rural classes in Ireland with a view to seeing what improvements should be made in the existing system, having special regard to the form of agricultural credit most suitable to the requirements of the occupiers of land affected by the Land Acts in the western districts and throughout the country generally.

The first part of the problem is concerned with the case of existing agricultural credit societies formed on the Raffeisen principle. There are at present in Ireland about 260 of these societies, most of which have been organised by the Irish Agricultural Organisation Society. In the year 1901 the Department, with the concurrence of the Agricultural Board, decided to assist societies of this kind by granting loans in suitable cases. At present there are about 100 credit societies holding loans from the Department, and the amount of the outstanding loans is about £9,000. Experience has shown that while many o the societies are doing excellent work, in some cases the money advanced by the Department is not being used to the best advantage, and it is evident that the societies would derive much benefit from a regular system of inspection and audit. The Department, believing that co-operative credit societies when established on a proper basis and when subject to adequate supervision and control can fulfil a most useful function in connection with the work of agricultural development, desires to see an improvement in the present methods of organisation and management.

The other aspect of the problem of credit has reference to the new tenancies which are being created under the recent Land Acts, especially in the West. Large areas of grazing land are being purchased by the State and are being subdivided into suitable farms which are being allotted to men brought from uneconomic holdings. As a rule the new-comers have little, if any, capital and are sadly deficient in farming knowledge. The Department has provided teachers and overseers, whose business it is to help the new occupiers and to give them instruction and advice necessary to work their farms with some success. But no general system has yet been devised whereby these men can obtain sufficient capital on favourable terms to enable them to stock and equip their farms. The case of these men is not met by the existing agricultural credit societies, as the amounts of the loans needed are on a larger scale than the transactions of such societies. The Department feels that the problem, which is one of great complexity, should be dealt with in the first instance by means of a systematic and comprehensive inquiry, and they have under consideration the question of entrusting such an inquiry to a small departmental committee.

CHAPTER XXIV: THE TECHNICAL INSTRUCTION BRANCH OF THE DEPARTMENT.

INTRODUCTORY.

The term "Technical Instruction Branch of the Department" is used here to indicate the portions of the Department's work which are directly concerned with education for and in Industrial, Urban Housekeeping, Technological and Art occupations.

This Branch of the Department is concerned with operations in the following fields:—

1, 2. Secondary Schools (the supplementary training of teachers, Scholarships and Grants.)

3. Technical Classes in various urban centres and rural districts.

4. Schemes under Local Authorities.

5. Central Institutions and Scholarships.

The funds which maintain the work of this Branch of the Department have been dealt with under Section 2 of Chapter XXI on "Administration and Funds," and in the information furnished by the "Conversation" with Mr. George Fletcher.

When the Department was inaugurated, it found itself confronted by conditions in the Primary (National) and Day Secondary Schools which did not provide the knowledge, training or experience necessary to enable pupils to derive the greatest amount of benefit from any scheme of industrial training or technical education. The situation which faced the Department called for the thorough teaching of Experimental Science, Drawing, Manual Instruction and Domestic Economy, to prepare boys and girls for Technical Instruction.

SECTION 1: THE TRAINING OF TEACHERS.

TEACHERS OF DAY SECONDARY SCHOOLS.

Technical Schools, or Science and Art Schools, provide special classes or courses for the instruction of teachers of Primary or Secondary Schools. In accordance with a scheme approved by the Department, grants may be paid for such service. The instructors must be recognized by the Department as qualified for this special work. In the report of 1909-10 it is said, "It is not proposed in future to demand the same high qualifications from teachers in the smaller schools as from teachers in the larger technical institutions, especially in the County Boroughs, nor to approve of the larger institutions employing teachers who from economic or other reasons have to be accepted as teachers in small schools."

The training of teachers for Day Secondary Schools is provided for through courses of instruction to teachers held in July and August in experimental science (physics, chemistry, mechanical science, botany and physiology and hygiene), laboratory arts, drawing and modelling, domestic economy, manual instruction (woodwork), practical mathematics and mechanics, hand-railing, office routine and business methods, hygiene and sick nursing, housewifery, and rural science (including school gardening). A special course of instruction for teachers of crochet-work, embroidery and sprigging is also held.

The institutions at which the courses were conducted were:—The Royal College of Science, Dublin; The Metropolitan School of Art, Dublin; the Irish Training School of Domestic Economy, Co. Dublin; the Department's Industrial Annexe, Grand Canal Bank, Dublin; The Municipal Technical Institute, Belfast; the City of Dublin Technical Schools; The Christian Brothers' Schools, North Richmond Street, Dublin; the Municipal Technical School and School Garden, Kingstown; the Albert Agricultural College, Glasnevin; and the Crawford Municipal Technical Institute, Cork. Special centres were arranged for members of enclosed religious orders, for whom courses of instruction in experimental science, drawing and modelling and domestic economy were provided.

The courses were attended by 621 teacher-students, of whom 478 received certificates of satisfactory attendance and progress; the number attending for instruction in the various subjects being:—experimental science, 259; laboratory arts, 19; drawing and modelling, 117; domestic economy, 41; manual instruction (woodwork), 21; practical mathematics and mechanics, 29; hand-railing, 10; office routine and business methods, 19; hygiene and sick nursing, 19; housewifery, 19; rural science (including school gardening), 30; crochet-work, etc., 38.

TEACHERS OF NATIONAL SCHOOLS

In addition to the training provided for teachers in Day Secondary Schools, the Department has conducted classes for the training of National School teachers in Elementary Science at 10 centres. The number of teacher-students in attendance was 88, and the number who received certificates of satisfactory attendance and progress was 69.

Special Summer classes in Rural Science, including School Gardening, were held by the Department during the month of August. 30 National School teachers were admitted to these courses, and 25 received certificates of satisfactory attendance and progress.

There was a great increase in the number of classes conducted for the training of teachers in Domestic Economy. Classes were held at 18 Technical Schools. 422 teachers were presented for examination, of whom 367 secured certificates of satisfactory attendance and progress.

Special Drawing classes for National School teachers were conducted in 3 Technical Schools. These were attended by 23 teacher-students, but only 7 were presented for examination, and only one qualified for the certificate of satisfactory attendance and progress.

INSTRUCTRESSES OF DOMESTIC ECONOMY.

The Technical Instruction Branch of the Department carries on the work of training Instructresses for Domestic Economy classes for towns and cities at places separate from those under the Branch of Agricultural Instruction.

The work of the Irish Training School of Domestic Economy is carried an at St. Kevin's Park, Kilmacud, near Dublin. The Commission visited the School, which is housed in premises standing in grounds of about 3 acres. It can take in about 45 pupils, and about 15 qualified instructresses are turned out yearly.

The work of the School comprises two courses of instruction:—

(1) A course of one year in Household Management, the object being to train girls for the management of their own homes, and also to fit those who may not be selected for further training as teachers to undertake positions as matrons of large institutions, manageresses of hotels, etc.

(2) A two years' course of training for teachers of Domestic Economy.

All students of the School are required to attend the first-named course. Students are admitted to this course in August of each year. Applicants must satisfy the Department as to their general education. University graduates and applicants who have passed the Senior Grade examinations of the Intermediate Education Board, and who are otherwise suitable, will be admitted forthwith if accommodation is available. All others are required to pass an entrance examination, vacancies being offered to those who stand highest at entrance examination.

Only students who have worked satisfactorily through the course in Household Management are eligible for admission to the course of training for teachers of Domestic Economy.

At the close of each school year the Department, on consideration of the results of the examination held at the close of the course of Household Management, and the reports of their Inspectors and of the Teaching Staff upon the work of the students during the session, will select for training as teachers of Domestic Economy a limited number of students who have shown themselves most capable of taking full advantage of the course of training provided.

Students with physical defects of voice, sight, or hearing will not be selected to undergo the course of training.

The course of training, which extends over at least two complete sessions, involves a complete course of Domestic Economy suitable for teachers of this subject. It includes the principles of practical elementary science involved in domestic work; Cookery; Laundry; Dressmaking and Home Sewing; and Housewifery (including household routine and the keeping of accounts); and practice in the teaching of these subjects. Practical instruction in Home Hygiene and Sick Nursing is afforded, and instruction is given in the Theory and Practice of Education.

All students pay a fee of £10 per term (about 20 weeks), which includes tuition, residence and board, but not personal laundry, facilities for which, however, are afforded to students.

Scholarships.

Scholarships at Residential Schools of Domestic Training of the value of £15 each, are awarded to a limited number of girls to enable them to attend for one year a regular course of instruction and training in Domestic Economy, such as will cultivate their intelligence and resourcefulness and render them more practical in the performance of home duties. The Scholarship, together with the payment of a fee of £2 on the part of the scholar, entitles the holder to board, residence, and instruction during the term of the Scholarship. (Under the County Cork scheme the value of the Scholarship is only £10, the scholar being required to pay a fee of £8.)

The total number of Scholarships for girls in 1910 by 10 different Committees was 63; the scholars were distributed among 7 approved Residential Schools of Domestic Training.

SECTION 2: SCHOLARSHIPS AND GRANTS FOR SCHOOL PUPILS.

Until 1910 Scholarships tenable in Secondary Schools were provided in connection with schemes under local authorities to encourage and enable students to take further courses of instruction than they would otherwise have been able or disposed to do. The Department had for a long time been aware that the object of these Scholarships, which was to prepare boys for industrial careers, had not been attained. The subject was brought up for discussion at the Board of Technical Instruction, and a Committee appointed to draft a revised scheme. The scheme has now been issued and will replace that previously existing.

The Scholarships are now divided into two classes:—

(1.) *Technical Scholarships* for boys of 13 years and upwards, who have completed their primary school course, tenable at Day Trades Preparatory Schools or other schools which provide a course of the same type.

(2.) *Apprenticeship Scholarships* for boys, who have attained the age of 16, tenable throughout the term of indentured apprenticeship to approved trades.

The intention of these Scholarships is to secure picked boys from the primary school and, after a period spent in a school offering a course specially designed to prepare him for a trade, to provide a sum sufficient to maintain the boy throughout the whole period of his apprenticeship in a skilled trade. It is believed that this scheme will remedy the defect so often experienced where a boy who has received a good preliminary training is unable to follow it up by apprenticeship in a skilled trade for which his abilities fit him.

GRANTS TO DAY SECONDARY SCHOOLS.

Grants are paid from the Parliamentary Vote, as outlined in the section on Administration and Funds, for instruction given at Day Secondary

Schools in Experimental Science, Drawing, Manual Instruction and Domestic Economy. Regulations for the administration and distribution of these grants are as follows:—

I. Subjects.

1. *Experimental Science* shall mean such a system of instruction in Physical and Natural Science as will involve the greater part of the work being done by the pupils themselves in an approved laboratory.

2. *Drawing* shall mean a system of instruction in Freehand, Object, Model, and Geometrical Drawing, and Modelling.

3. *Manual Instruction* shall include instruction in the use of tools employed in Wood or Metal-working, and Drawing in connection therewith.

4. *Domestic Economy* shall include Cookery and Home-sewing, and may include Laundry-work or any other form of practical instruction in household management of which the Department may approve.

5. No scheme will be approved unless the Department is satisfied that due provision is made for the instruction of pupils in the other main branches of a general education.

II. Grants.

Grants in respect of courses of instruction in Experimental Science, Drawing, Manual Instruction, and Domestic Economy may be made, in accordance with the following regulations, to Day Secondary Schools in which sufficient provision is made for instruction in the other main branches of a general education:—

1. Grants shall be payable in respect of attendances made by those students only who are 12 years of age on or before the 31st day of May in the calendar year in which the course is entered upon, and who have completed an education which would entitle them to be placed in the Sixth Class of a school under the Board of National Education in Ireland. Pupils on the roll of a National School are not eligible for attendance grants.

2. Grants shall be payable in respect of attendances made by the pupils of those schools only which have been approved by the Department.

3. Grants on the average attendance of duly qualified pupils will be made for each hour of instruction per week throughout the school year, according to the following scale:—

Experimental Science.—10s. for the first year of the course; 12s. 6d. for second; 15s. for third; 20s. for fourth year.

Domestic Economy (*as a Special Course*).—8s. for third or fourth year of course.

Drawing.—5s. for the first year of the course; 6s. for second; 7s. for third or fourth.

Manual Instruction and Domestic Economy (*Auxiliary Courses*).—6s. for first year of course; 7s. for second; 8s. for third or fourth.

III. Courses of Instruction.

1. The Courses of Instruction include:—

(*a.*) *A Preliminary* (*two year*) *Course* which is obligatory on all pupils and on all schools claiming grants under these regulations, and

(*b.*) *Special Courses*, which are optional.

The *Preliminary Course* may vary according to the character of the school, but it shall include Experimental Science for not less than 3 hours per week and Drawing not less than one hour per week. In schools claiming grants for more than six hours' instruction in this Course in any week, Manual Instruction or Domestic Economy must form part, and at least 1½ hours' instruction per week must be devoted to one of those subjects.

In Schools also which do not provide instruction in one of the Special Courses, or whose Special Course has not been recognized by the Department for attendance grants, Manual Instruction or Domestic Economy, with Experimental Science and Drawing, shall constitute the Preliminary Course; and in order that the Preliminary Course in such schools may be recognized, the time-table must show that at least 6 hours' instruction per week is devoted to those three subjects.

A *Special Course* must include one, but may not include more than three subjects, to which Manual Instruction or Domestic Economy (unless taken as a Special Course) may be added. Managers will be allowed much latitude in selecting the subject or subjects most suitable to their own school.

Managers desiring to have the special courses of their schools recognized must show that a fair proportion of the pupils who have worked through the Preliminary Course are prepared to attend the Special Course; that not less than 3 hours per week are to be devoted to each subject of the Special Course; and that at least one-third of the time is to be assigned to theoretical instruction.

IV. Laboratories.

No grant will be made for instruction unless due provision is made for experimental work in Science, on the part of the pupils, in properly equipped and approved laboratories.

V. Duration of Lessons.

Practical instruction in Science, Manual Instruction and Domestic Economy, must be given in lessons of at least 80 minutes' duration.

Lessons of less than 40 minutes' duration will not be considered in computing the "total number of hours of attendance."

The minimum time per week recognized for grants on behalf of attendance at Manual Instruction or Domestic Economy is 1½ hrs.

The time-table must be so arranged as to leave sufficient time to the teacher for preparation of laboratory work.

VI. Size of Classes.

Not more than 40 pupils shall be taken at a time by one teacher for Theoretical Instruction, nor more than 20 for Practical Instruction in any subject, unless an assistant recognized by the Department is provided. In that case the number for Practical Instruction may be increased to 30. Instruction in Drawing may, for this purpose, be regarded as theoretical instruction.

Where classes for practical instruction are small, concurrent instruction in two subjects may be exceptionally allowed, but the approval of the Department must be obtained in each case.

Extent of the Work in 1909-10.

Information on the principles which guide the policy of this Branch in carrying out this work are referred to at some length in the "Conversation" with Mr. George Fletcher.

The total number of primary Schools for which grants were paid, through the Department, for Drawing and Manual Instruction was 95 Schools. The amount of the grants was £1,639.

The total number of Day Secondary Schools for which grants were paid, through the Department, for courses given in Experimental Science, Drawing, Manual Instruction, Domestic Economy was 286 schools. The following table shows the number of pupils taking each of these courses in each of the four years, and the amount of the grant earned in connection therewith.

	1st year	2nd year.	3rd year.	4th year.	Total. Grants.
Experimental Science...	6,127	4,397	2,072	352	£21,247
Drawing.....	6,127	4,397	453	66	3,999
Manual Instruction...	1,437	684	116	5	1,121
Domestic Economy....	453	206	389	48	1,100
					£27,467

13,406 individual students participated in the work.

SECTION 3: TECHNICAL SCHOOLS AND SCIENCE AND ART SCHOOLS AND CLASSES.

The Technical Schools or Science and Art Schools, where educational work to the satisfaction of the Department is done, may draw special grants for pupils who take courses and classes at them, as outlined in the information from Mr. George Fletcher. During 1909-10 the authorities of 87 Technical Schools or Science and Art Schools and Classes received grants through the Department from Parliamentary votes amounting to £18,223, the total number of students concerned being 8,102.

Some extracts, which contain information appropriate and useful to Canada, are taken from the Regulations which are designed to provide supplementary aid towards the instruction given in these Technical Schools and Classes.

Difficulties and Advantages of Evening Classes.

The Schools and Classes working under this Programme are mainly, though not exclusively, Evening Schools. It may be useful to indicate the position which teaching in evening classes occupies in relation to other branches of education. It is clear that instruction in evening classes cannot form a substitute for the more general systematic education given in Day Schools, whether Primary, Secondary or Technical. The work of such evening schools and classes constitutes a specialised form of education intended to fit those receiving it for industrial or commercial pursuits, or to render those already engaged in such pursuits more efficient in their work. Instruction of this nature in evening schools has obvious defects; it possesses, however, certain well marked advantages. Attendance at such schools is purely voluntary. Those attending are for the most part engaged or about to be engaged in some form of industry—they have commenced the serious work of life—and are meeting problems and difficulties which the Evening Technical School can help them to solve. They perceive that the higher branches of their calling may be reached only by increased technical skill and knowledge. This being the case, the attitude of evening students to instruction is usually most favourable; but progress is hindered by several circumstances: hitherto the previous preparation of students joining evening Technical Schools has in many cases not been such as to fit them for the specialised form of instruction which it is the special function of such schools to impart.

An attempt is made in these Regulations to remedy this defect. Before a student can take full advantage of a specialised course of instruction in any branch of Science or Technology he should at least be able to express himself clearly, both orally and by means of writing and drawing; he should be able to make such elementary calculations as are required in all industries, and he should know something at least, and that something really and practically, of the fundamental principles of science underlying all industrial work. Without this preparation a student cannot hope to profit by a specialised course. He will be continually handicapped and disheartened by the difficulties, and will tend to retard other members of the class who may be better prepared. When these conditions are not satisfied the young student should be given an opportunity to comply with them, and to this end should enter the Preparatory Course.

A second difficulty is the shortness of time available for instruction in Evening Classes. For students engaged in arduous work during the day the amount of time devoted to evening technical school work must be severely limited. Speaking generally, not more than two evening attendances a week can be expected, for homework is essential if full advantage is to be derived from the work in class. The hours of school study thus limited become precious, and the organisation of the School and the efforts of the teachers should be earnestly directed to the most thorough utilisation of these two hours, and to this end every lesson should be carefully prepared. It will, moreover, be obvious that, under such circumstances, regular attendance becomes a matter of the highest importance. The Department mark their sense of the importance of this by the "Increment Grant," under which largely increased grants are paid for continued attendance over 20 hours up to a limit of 120 hours.

Instead of offering a number of *Subjects* a school should offer a number of *Courses*, and no student should be allowed to omit subjects of fundamental importance. Where, however, a student on entering a school shows a competent knowledge of the earlier stages of a Course of Study he may be allowed to join the Second or Third Year Course.

Some of the Regulations for Grants.

For the purposes of grants the subjects which may be included in specialised courses of study, and on which payment may be made, are grouped as follows, but courses of study may be taken from different groups.

Group A.—Commercial Subjects (Section A.)
Group B.—(1) Commercial Subjects (Section B.)
(2) Languages.
(3) Mathematics.
Group C.—Science (Pure and Applied).
Group D.—(1)Handicraft.
(2) Domestic Science.
Group E.—Art Subjects.

Group C.—*Science (Pure and Applied).*

Under pure science will be included such subjects as mechanics, physics, chemistry, biology, botany, zoology, physiology. Under applied science would be included naval architecture, navigation, nautical astronomy, building construction, machine construction and other subjects involving systematic instruction in the underlying scientific principles, and which would be classified under such headings as:—

(1) Building industries.
(2) Metal industries.
(3) Textile industries.
(4) Printing and process industries.
(5) Furniture industries.
(6) Leather industries.
(7) Woodworking industries.
(8) Carriage Building industries.
(9) Electrical industries.
(10) Chemical industries.
(11) Agricultural industries.

At least half the instruction in subjects included in this group should be practical, and must be given under approved conditions of accommodation and equipment.

The practical work must be so arranged as to be illustrative of the principles taught, and should not be directed to developing dexterity in the practice of trade processes.

Day Schools for Apprentices and Others Engaged in Business.

Day technical or commercial schools or classes, which are conducted by properly constituted managers, either in conjunction with works, business houses, or technical schools, with a view to improving the conditions of local industries and commerce, and to the further training of sub-managers, foremen, tradesmen or apprentices, may be admitted for grants under this section.

Such schools or classes must be open on one or more days of the week, not later than six o'clock in the evening, or than 1 p.m. on Saturdays.

Grants not exceeding three-fourths of the certified annual expenditure for the conduct of such schools or classes may be made by the Department in respect of students for whom an employer's certificate can be produced, showing that the students have been engaged during session in a business, trade, or industry, or that they are indentured or properly engaged as apprentices to a firm or to an individual.

The expenditure must be set forth in properly audited accounts, to be accompanied by vouchers.

The decision of the Department as to what constitutes a legitimate charge against annual expenditure shall be final.

The accommodation provided, the courses of instruction, the syllabuses of the subjects taught, the qualifications of the teachers, the time-table of instruction and the estimate of expenditure, must be approved by the Department.

The practical work must be so arranged as to be illustrative of the principles taught, and should not be directed to developing dexterity in the practice of trade processes.

SCHOOLS OF ART.

Schools of Art, which provide for students, the majority of whom are *industrial*, courses extending continuously over two or three years, according to a scheme approved by the Department, may be paid grants not exceeding three-fourths of the actual expenditure incurred in the conduct of such courses.

The expenditure must be set forth in properly audited accounts, to be accompanied by vouchers. An estimate of the expenditure must be submitted for the approval of the Department before the commencement of the session.

The decision of the Department as to what constitutes a legitimate charge against annual expenditure shall be final.

No grants will be payable to Schools of Art adopting this section of the regulations, under the methods of payments set out in Section III.

Recognition may be withheld or withdrawn from any School of Art in which, in the opinion of the Department, the efficiency of the instruction and the number of students in attendance do not justify the expenditure involved.

The amounts of grants payable in respect of any school may, on account of conspicuous merit, be increased by one-tenth, or, upon grounds of inefficiency, be decreased by one or more tenths, as the Department, in consideration of their Inspector's report, may determine.

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SECTION 4: SCHEMES UNDER LOCAL AUTHORITIES.

Introductory.

The various schemes of technical education under Local Authorities throughout Ireland are, on the whole, doing excellent work. They are revised annually in accordance with the experience gained. Nearly all the Local Authorities are now spending the whole of their available income, and in many cases their operations are very materially restricted by want of means. In a number of Urban Centres the provision of permanent buildings has proved unavoidable, and loans have been raised for the purpose of providing new buildings, the repayment of which falls upon the annual income, already too small for the maintenance of the school. Under these circumstances there is little opportunity for extension even on lines which have been shown to yield excellent results.

A statement is presented of the general conditions under which these schemes are carried on. That is followed by a presentation in detail of a typical scheme for the County of Kilkenny. This was chosen because the chief industries of the county represent those of many counties in Canada. The statement in detail under the sub-heading of Finance is presented in order that local authorities might see in detail the proportion of the total cost met from various sources of local revenue and by the contributions from the Department. After that, the scheme of a comparatively small urban district—that of Portadown, with a population of 10,092—is given in detail. Under the sub-headings of Finance and Subjects of Instruction, information is presented in detail of value to local authorities in Canada.

Altogether there are 35 urban schemes, participated in by 19,196 individual students; 30 county schemes,with permanent centres of instruction attended by 7,177 students; 34 county schemes with itinerant instruction, in which the classes are attended by 16,536 individual pupils. The total number of pupils in connection with the schemes under local authorities is 42,909, made up of 16,784 young men and 26,125 young women. Of these, 2,948 are boys and 2,998 girls who are still attending school.

Occupations of Young Men.

The occupations of the young men attending these classes are as follows:—

Engaged in Farming Occupations	2,338
Building Trades	1,127
Coach and Car Builders	65
Engineers and Metal Workers	1,485
Architects, Surveyors and Civil Engineers	125
Electrical Engineers, Instrument Makers	259
Textile Industries	550
Painters and Plumbers, Gasfitters, etc.	378
Applied Art Trades—Jewelry, Furniture	164

Chemists, Analysts, etc.	269
Salesmen, Shopkeepers, Clerks, etc.	3,621
Teachers	697
Students (University, etc.)	264
Other occupations	1,343
Boys just left school or college	296
Boys still at school or college	2,948
No occupation stated	612
Total	16,784

Occupations of Young Women.

The occupations of the young women are as follows:—

Farming Occupations	6,256
Domestic Service	1,526
Printing Trades	39
Dressmakers, Milliners, etc.	763
Textile Industries	410
Other factory workers	709
Embroidery, Lace, etc.	1,972
Saleswomen and Shopkeepers	1,300
Clerks	929
Teachers	2,117
Students (University, etc.)	131
Other occupations	1,618
Girls just left school or college	58
Girls still at school or college	2,998
No occupation stated	4,777
Total	26,125

The amount of money contributed by the Department from its Endowment Fund in 1909-10 was £58,916. £29,514 was contributed from local rates.

In addition the Schools and Classes earned grants, paid from Parliamentary Votes through the Department, amounting to £18,223 for the work of 8,102 pupils.

General Conditions for Each of the Schemes.

The Scheme is not intended to apply to children under 14, but such children who have been placed in the Sixth Class of a National School, or who have received an equivalent education, may be admitted to classes provided that there is accommodation available. Under no circumstances may scholars on the roll of a Primary School attend classes, under the Scheme, which meet during Primary School hours.

Schools or classes conducted or aided under the provisions of the Scheme shall be at all times open to the Department's Inspectors, who from time to time report to the Department on the condition and suitability of the school buildings or class-rooms, the character of the instruction and its suitability to the needs of the locality, the sufficiency of the teaching staff for the number of students under instruction, the progress of the students—which they may ascertain in such a manner as may be necessary—the method of registration, and, generally, the observance of the provisions of the Scheme.

Classes conducted or aided under the Scheme shall not be of such a size as to impair the efficiency of the instruction. (A practical class should consist of not more than 20 students under one teacher, and a theoretical or demonstration class of not more than 40 students. Local Committees should assist teachers in keeping classes within these limits).

Control will be exercised over the admission to classes so that students may take only associated subjects, and admission to certain classes may be limited by entrance examinations in order that the classes may be of a manageable size, and that students selected may be capable of taking full advantage of the instruction.

Classes will, unless in exceptional circumstances, be closed should the average attendance for four successive lessons fall below six.

Attendance Registers shall be carefully, regularly, and punctually marked.

A Local Committee of Management shall be formed in each centre in the Rural Districts where classes are to be held. The Committee formed shall appoint an Honorary Secretary, and place itself in communication with the County Joint Committee. In an Urban District the classes shall be under the management of a Local Committee appointed for this purpose by the Urban District Council. Wherever the instruction of girls is involved a number of ladies should be included in the Local Committee.

The duties of a Local Committee are:—(*a*) to arrange for suitable accommodation for the courses of instruction to be given; to awaken local interest, and to make due provision for the starting, or resumption, of the course. (*b*) to assist in securing regular and punctual attendance at the classes; (*c*) to visit the classes from time to time, and to check and sign the registers, and (*d*) to make recommendations to the County Committee as to local requirements in connection with the classes.

(A) SPECIMEN TECHNICAL INSTRUCTION SCHEME, COUNTY KILKENNY.

The Scheme ran from 1st August, 1910, to 31st July, 1911. Subject to the provisions requiring local contributions from the rates, it was applicable to the Urban District of Kilkenny and to all the rural districts within the administrative area of the County Council.

Population of County:—Urban Dist., 10,609; Rural,68,550; total 79,159.

Valuation of County:—Urban Dist., £19,552; Rural £344,369;total£363,921.

Valuation of 1d. rate:—Urban Dist., £81; Rural, £1,434; total £1,515.

The County Council's contribution from the rates was paid over to the Committee in quarterly instalments; the Urban District Council's contribution two-thirds in October, 1910, and balance in March, 1911.

The Technical Instruction Committee is a Joint Committee of the Kilkenny County Council and the Urban District Council of Kilkenny, consisting of 31 members, of whom 17 are councillors, and 14 added members.

CHIEF INDUSTRIES.

The most important industries (excluding agriculture and allied industries) are building trades, woollen cloth manufacture, engineering, cycle making, furniture making, tobacco curing, marble and slate quarrying and working, monumental carving, printing and book-binding, milling, foundry-work, brewing, cooperage, weaving, baking, cabinet-making, boot-making, coal-mining, distilling, tanning.

OBJECTS OF THE SCHEME.

The objects of the Scheme are to provide, mainly by classes in Evening Technical Schools and in the Day Trades Preparatory School, by scholarships, and by the employment of itinerant teachers, instruction in technological, science and art, commercial, industrial, and domestic economy subjects.

The Scheme is set out under the following heads:—(1) Finance. (2) Subjects of Instruction. (3) Teaching Staff. (4) Day Trades Preparatory School. (5) Itinerant Instruction. (6) Scholarships for Boys. (7) Evening Technical Classes.

(1.) FINANCE.

A. *Estimated Income.*		£
(1) Contribution form County Council from rates levied over the rural Districts, year ending 31st March, 1911		540
(2) Contribution from Urban District Council of Kilkenny (produce of rate of 1d in the £ levied in financial year ending 31st March, 1911)		80
(3) Contributions from Department:—		
(*a*) Annual Grant from Endowment	£ 820	
(*b*) Special Grant towards maintenance of Day Trades Preparatory School	£420	
(*c*) Grants for Instruction in Science, Art, etc.	£150	
(*d*) Grant in aid of the Scholarship Fund	£ 50	
		1,440
(4) Students' Fees, and Sale of Books, Class Materials, etc		60
(5) From Managers of Day Secondary Schools for part services of Art Master		80
Total		£2,200

B. *Estimated Expenditure.*

	£	
(1) Salaries of Teachers:—		
(*a*) Principal and Secretary	260	
(*b*) Permanent Teaching Staff	965	
(*c*) Increase of Salaries of Permanent Teachers	30	
(*d*) Temporary Teaching Staff	80	1,335
(2) Travelling expenses and Allowances		100
(3) Scholarships for Boys		188
(4) Prizes		60
(5) Maintenance of Classes at Temporary Centres, including rent of rooms, cost of supplies, removal of equipment, etc.		150
(6) Maintenance of Classes in Urban District of Kilkenny, including rent of premises, insurance, caretaker's wages, heating, lighting, etc.		250
(7) Equipment		37
(8) Administration, including cost of clerical assistance, office expenses, printing, stationery, and advertising		80
Total		£2,200

Subjects of Instruction.

in evening classes.

Preparatory Course.—English, elementary mathematics, drawing, manual instruction (woodwork).

Commercial Subjects.—Shorthand.

Science (*Pure and Applied*).—Building construction and drawing, machine construction and drawing, physics, chemistry, tailors' cutting, carpentry and joinery.

Handicraft.—Manual instruction in wood and metal.

Domestic Science.—Cookery, housewifery, laundry-work, dressmaking, home-sewing, sick-nursing, hygiene.

Art Subjects.—Freehand, object, model, and blackboard drawing, drawing in light and shade, design, geometrical drawing, painting of ornament in monochrome.

at temporary centres.

The subjects taught will mainly be those mentioned in Sect. (5) —'Itinerant Instruction,' but such of the subjects above-mentioned as may be suitable to a particular locality may be added from time to time.

in the day trades preparatory school.

Experimental science and drawing, workshop mathematics, manual instruction in wood and metal, practical geometry, and literary subjects, including one modern language in addition to English.

(3) Teaching Staff.

The teaching staff will comprise permanent and temporary officers.

The *permanent* staff will consist of:—

(1.) A principal, whose duties shall be:—

To act as secretary to the Committee;

To give effect generally to the provisions of the approved scheme in accordance with instructions of Committee;

To supervise the work of the teaching staff;

To conduct day and evening classes as may be found necessary.

(2) A teacher of experimental science, mathematics, etc. with special qualifications in mechanical science.

(3) A teacher of art subjects, whose services will be partly utilised in conducting day classes in certain Secondary Schools.

(4) Two manual instructors.

(5) A teacher of English, mathematics and French.

(6) Three itinerant instructresses in domestic economy. The services of these instructresses shall be available in Kilkenny Urban District and other centres as may be arranged, (They will be entirely engaged in conducting courses of instruction in temporary centres between the close of one evening school session and the opening of the next.)

It will be a condition of all appointments on the permanent staff that teachers will be prepared to give instruction in rural centres, and in both day and evening classes, when required by the Committee, and that they shall be under control of the principal.

The *temporary* staff will consist of teachers specially qualified to give instruction in technical and commercial subjects, whose engagements shall be subject to such conditions as may be arranged at the time of making each appointment.

(4) Day Trades Preparatory School.

The school is conducted at the City Technical School, Kilkenny. Its aim is to provide for boys over 13, who have received an education equivalent to that of the sixth standard of a National School, such a course of training as will fit them to enter upon an industrial career.

The course of instruction will extend over 3 years.

Candidates for admission will be tested by an entrance examination conducted under conditions approved of by the Department.

The Department will bear three-fourths of the approved net annual cost of maintaining the School. The proportion of the expenditure admitted for payment by the Department may be increased by one-tenth if the Department, after consideration of their inspectors' reports, are of opinion that the organization and teaching justify such a course, or may be reduced by one or more tenths if these are considered unsatisfactory.

A sum of £30, (included in the amount allocated for prizes) is reserved for pupils who have completed satisfactory courses at this School, and will be

distributed as follows:—3 prizes of £10 each may be awarded to students who have most satisfactorily completed a course extending over 3 years, choice being made of the most deserving students, having regard to the report made by the Principal in each case. Should sufficient merit, in the opinion of the Committee, not be shown, any or all of the prizes may be withheld. The first moiety of the prize in each case shall be payable on the production of satisfactory evidence that the student has entered upon an apprenticeship, or taken up industrial employment approved by the Committee, and that satisfactory provision has been made for his receiving further instruction in evening classes. The second moiety shall be payable six months later, on the production of evidence of satisfactory progress on the part of the student.

(5) Itinerant Instruction.

The subjects to be taught will include manual work in wood, technical drawing, building construction, cookery, laundry-work, needlework (including repairing, plain sewing and dressmaking), hygiene, housewifery. The teachers will continue to give short courses of instruction in centres where suitable arrangements can be made for accommodation of classes, which may be held for both day and evening students at each centre. Instruction will be adapted to local needs, and will be as practical in character as possible.

The short courses will be organized so as to allow a teacher to devote 30 days to instruction at each centre, and, when expedient, to work two centres concurrently.

In temporary centres a course of instruction in practical cookery and housewifery or manual instruction shall consist of 30 two-hour lessons, laundry-work 12, and needlework at least 18 such lessons. A time-table and itinerary showing distribution of time of itinerant teachers for the session is prepared as soon as possible after date fixed for return of forms of application.

(6) Scholarships for Boys.

Provision is made for award of Scholarships to boys attending primary schools, the object being to aid promising boys, who have already received a satisfactory primary education, to receive at the Kilkenny Day Trades Preparatory School a course of instruction specially designed to fit them to enter upon an industrial career.

These Scholarships entitle the holders to free tuition and the free use of text books, tools, etc., at above School, and in a certain number of cases to a maintenance allowance, the amount of which will vary with the distance of the residence of the boy from said School.

(7) Evening Technical Classes.

The Committee, in addition to maintaining the Kilkenny City Technical School, will establish, or aid in establishing, so far as the funds at their disposal permit, evening technical classes in places to be previously approved of by the

Committee and the Department,—(*a*) by acquiring or giving aid towards acquiring class rooms, (*b*) by making arrangements, so far as possible, to allow the Instructors employed by the Committee to conduct classes in subjects specially suited to the needs of the locality.

(B). SPECIMEN TECHNICAL INSTRUCTION SCHEME, URBAN DISTRICT OF PORTADOWN.

Chief Industries: Linen weaving, handkerchief weaving and hem-stitching, building, corn milling, engineering, fruit preserving, brick-making.

Population, 10,092. Valuation, £29,588. Value of 1d. rate, £123.

The local contribution from the rates was paid over to the Technical Instruction Committee in October, 1910, and February, 1911.

The Committee was appointed in February, 1908, and ceased to hold office in January, 1911. There were 15 members, of whom 8 were Urban District Councillors, and 7 added members.

The objects of the scheme, which ran from 1st August, 1910, to 31st July, 1911, were to provide: (1) Instruction by means of systematic courses in Science, Art, Technological, Commercial and Domestic Subjects, in Evening Classes, for those engaged in various industries during the day. (2) Instruction of a general scientific and technical nature for boys over 13 in the Day Trades Preparatory School. (3) Instruction for apprentices in the sciences and principles underlying their trades by means of a Day School for Apprentices.

The School is situated in Armagh Road and contains lecture rooms, art room, two class-rooms, manual instruction workshop, domestic subjects room, engineering workshop, physical and chemical laboratory (with balance and store rooms), mechanical laboratory, engine room, dark room, preparation room, scullery, offices, etc.

The Commercial Classes are held in the Free Library.

The Scheme is set out under the following heads:—

(1) Finance.
(2) Subjects of Instruction.
(3) Day Trades Preparatory School.

(1) Finance.

A. *Estimated Income.*

(1) Contribution from Urban District Council (produce of a rate of 1d. in the £ levied in financial year ending 31st March, 1911)	£	100
(2) Students' Fees		100
(3) Donations to Prize Fund		20

		£
(4) Contributions from Department:—		
(*a*) From Endowment	£ 500	
(*b*) Grants for instruction in science, art, etc.	300	
(*c*) Grant towards maintenance of Day Trades Preparatory School	405	
		1,205
(5) Sale of books, cookery materials, etc.		20
(6) Fees for instruction in experimental science of pupils from extern schools		12
(7) Grant from National Education Board for instruction in Cookery to National School children		8
Total		£1,475

B. *Estimated Expenditure.*

(1) Salary of Principal	275
(2) Salaries of other teachers	680
(3) Prizes and Scholarships (evening school only)	20
(4) Scholarships (Day Trades Preparatory School)	22
(5) Caretaker's wages	52
(6) Fuel, light and cleaning	40
(7) Rent, rates and insurance	85
(8) Equipment (new and renewals)	50
(9) Class materials	30
(10) Printing, advertising and stationery	40
(11) Repairs to premises, grounds, etc.	5
(12) Administrative and incidental expenses	50
(13) Appropriation to meet the deficit on the working of the Scheme in previous Sessions	126
Total	£1,475

(3) Subjects of Instruction.

Preparatory Course.—English, mathematics, drawing, experimental science and manual training (woodwork).

Commercial Subjects—Shorthand, typewriting, business methods and routine, book-keeping, commercial English, commercial correspondence, commercial arithmetic, commercial geography, banking and currency, economics of industry, and commercial law.

Languages.—French and German.

Mathematics.—Practical and pure mathematics, practical plane and solid geometry.

Science (Pure and Applied).—Carpentry and joinery, workshop practice, chemistry, experimental science, applied mechanics, machine construction

and drawing, magnetism and electricity, building construction and drawing, steam, mechanical engineering, electrical engineering, textiles, tailors' cutting, elementary science (teachers).

Handicraft.—Manual training (woodwork and metal work).

Domestic Science.—Cookery, laundry-work, housewifery, plain and fancy needlework, dressmaking, renovations.

Art Subjects.—Freehand, blackboard, geometrical and model drawing, drawing in light and shade, drawing of common objects, design, perspective,

(3) Day Trades Preparatory School.

The Day Trades Preparatory School is conducted at the Technical School, Portadown, the aim being to provide for boys over 13, who have received an education equivalent to that of the Sixth Standard of a National School, such a course of training as will fit them to enter upon an industrial career.

The course of instruction extends over a period of 3 years, and includes experimental science, drawing, workshop mathematics, manual instruction, practical geometry, and literary subjects, including one modern language besides English.

The Department bears three-fourths of the approved net annual cost of maintaining the school. The proportion of the expenses admitted for payment by the Department may be increased by one-tenth if, in the opinion of the Department's Inspectors, the organization and teaching merit special recognition, or it may be reduced by one or more tenths if these, in the opinion of the Department's Inspectors, are unsatisfactory.

SECTION 5: CENTRAL INSTITUTIONS AND SCHOLARSHIPS.

As already mentioned under "Administration and Funds," Parliamentary Votes provide for the maintenance of the following Central Institutions:—

Royal College of Science	£16,097
National Museum of Science and Art	13,568
National Library of Ireland	5,477
Metropolitan School of Art	4,360
Royal Botanic Gardens	4,636

A special work carried on by the Department with these Institutions is the granting of Scholarships to enable approved persons to receive such education as will qualify them for posts under the Department or under local authorities in carrying out schemes which have been approved.

THE ROYAL COLLEGE OF SCIENCE.

This College at Dublin is an Institution for supplying an advanced Course of Instruction in Science as applied to Agriculture and the Industrial Arts; for

training teachers for Technical Schools and for Secondary and Intermediate Schools in which Science is taught; and for carrying out scientific research.

Faculties.

The College embraces three Faculties:—

Agriculture.
Applied Chemistry.
Engineering.

The main function of the Agricultural Faculty of the Royal College of Science is the training of teachers for employment under the Department's programme of Agricultural Education. The course extends over 3 years. A number of valuable scholarships are offered annually by the Department in connection with this course. Almost all the students in the Agricultural Faculty are holders of scholarships. The total number of students in the Agricultural Faculty at the close of the Session in June, 1910, was:

First Year	14
Second Year	10
Third Year	8

8 students who completed their training in June, 1909, obtained the College diploma in Agriculture and received appointments during the year 1909-10 in connection with the Department's schemes of agricultural education. The total number of students who had entered the Agricultural Faculty as holders of scholarships provided by the Department, and completed the course by the end of the 1909-10 session was 64, of whom 31 are employed as Itinerant Instructors in Agriculture, 3 as teachers of Agricultural Classes, 8 at the Department's Colleges and Stations, and 11 at the Central staff of the Department.

The maintenance of this College is not a charge on the Endowment Fund of the Department. It is maintained out of other grants provided by the Treasury which are administered by the Department of Agriculture and Technical Instruction.

A very fine, large, commodious and well appointed building for the housing of the Royal College of Science was nearly completed when the Commission was in Dublin. The whole expense was borne from the Treasury at London.

In general the Institution is organized to be on a plane with the Faculties of Applied Science of first class universities, and with the Technical High Schools of Germany.

NATIONAL MUSEUM, DUBLIN.

The Department arranges for the loan, from the National Museum of Science and Art, of cases of objects to Agricultural and Technical Schools and classes or to other institutions. It is considered very desirable that learners should be able to obtain information from the examination of actual objects

as well as from books and lectures. Under the Circulation Branch cases are prepared and sent out from time to time as applied for.

One group of cases contains objects useful to illustrate *Industrial Crafts*. From many others the following are mentioned:—joints used in carpentry; door construction; roof trusses; cabinetmaker's work; wool, British and Colonial samples; wool, stages in manufacture; woollen goods made by machine knitting; paper manufacture; wallpaper printing; printing of books; bookbinding; varieties of leather; tanning of leather; manufactures from horn; manufactures from bone; filigree button making; manufacture of soap; bye-products of milk, etc.

There are also collections for the *Artistic Crafts*, including wood-carving, embroidery, hand-woven silks, copper repoussé work, engraving, carving stone, etc.

Cases may also be obtained with specimens illustrating plants, animals, metals and minerals. Cases are usually lent for periods of three weeks or seven weeks.

The collection of *Drawing, Design and Art* consists of works which have secured awards at the National Competition of Art Schools and Classes, works which have been accepted towards the Irish Secondary Teachers' Honours Drawing Certificate, and other school works of merit. The Department are prepared to send selected works on loan for a period not exceeding 14 days, to managers of Secondary and Technical Schools, in order to afford teachers and students an opportunity of judging the quality of execution to be aimed at in the work of Art Classes. As a rule, not more than 18 works will be sent in response to any one application.

The loan is made on condition that Managers make arrangements for the safe custody of the works, and undertake responsibility for any damage which may be done to them from the time of their receipt until re-delivery into the custody of the Department.

METROPOLITAN SCHOOL OF ART, DUBLIN.

The Department of Agriculture and Technical Instruction for Ireland offers, through this School, instruction to students in Drawing, Painting, Modelling, and Designing. In the evening classes workmen, apprentices and foremen can obtain instruction in the various branches of these subjects, as well as their application to craft work.

The School Session extends from the beginning of October to end of July. The School is open daily (Saturdays excepted) from 9.30 a.m. to 3.30 p.m. and from 6.30 to 9 p.m.

School lectures are regularly given in connection with most of the studies, and other lectures and demonstrations are given as the school work may demand. Students who intend becoming Designers, Art Teachers, etc., are expected to attend the classes in Principles of Ornament and Design and the lectures in connection therewith. Modelling students who are studying Design are also expected to attend them.

Courses.

There are two sections in the Art instruction, viz., Elementary and Advanced, the subjects including architecture, and mechanical drawing, landscape and artistic handicrafts. The subjects in detail are:—Linear drawing by the aid of instruments; freehand outline drawing on rigid forms from flat examples; freehand outline drawing from the "round"; shading from flat examples; shading from the "round" and solid forms; drawing the human figure and animal forms from flat examples; drawing the human figure, or animal forms from the "round" or nature; anatomical studies of the human figure or of animal forms; drawing flowers, foliage, landscape, details and objects of natural history, from nature; painting ornament from flat examples; painting ornament from the cast, etc.; painting from flat examples, flowers, still-life, etc.; painting direct from nature; painting from nature groups of still-life, flowers, etc., as compositions of colour; painting the human figure or animals in monochrome from casts; painting the human figure or animals in colour; modelling the human figure or animals; modelling fruits, flowers, foliage and objects of natural history from nature; time sketches in clay of the human figure or animals from nature; elementary design; drawings from actual measurements of structures, machines, etc., applied designs, technical or miscellaneous studies; work designed and executed in material wholly by the student.

Artistic Handicrafts.

The craft work taught at the school includes Enamelling and Art Metal work; Leather and Gesso work; Stained Glass work; while the teaching of other craft work is undertaken in connection with the Design Classes.

Numerous prizes are awarded in each section of the work of the school annually, providing that there is adequate competition and the standard of work in the various sections is sufficiently high.

Drawing on the Blackboard.

Practice in this exercise is specially directed to the acquirement, by students, of freedom and skill in using chalk, or brush with tempera, on the blackboard for the purpose of making drawings or diagrams in outline and in the mass on a large scale, and of illustrating various lessons to a class.

Students are urged to study many kinds of common objects, plants, and other examples, and cultivate a free and accurate style of Drawing. The representation of these subjects should show that their structure has been well studied, understood and expressed, all unimportant details being omitted.

In testing the student's ability to draw on the blackboard, the examiner calls upon the student (1) to make a drawing from memory of one or two objects, natural forms, ornamental forms, or subjects such as would be useful for illustrating a lesson to a class; (2) to sketch on a large scale an object or group of objects placed before him; and (3) to make an enlargement from a simple example, selected by the examiner for the purpose.

Scholarships.

For Agriculture, Horticulture, Etc.

A limited number of Scholarships are offered for competition among young men in Ireland who desire to acquire a thorough knowledge of Technical Agriculture, and one or more also for students who intend to specialize either in

Horticulture, Forestry or Creamery Management. Each Scholarship includes (1) free admission to the first year's course in the College, (2) railway fare to and from Dublin, and (3) either of the following, at the option of the Department (a) a maintenance allowance of one guinea per week while attending the Royal College or elsewhere as the Department may decide, or (b) free board and residence at one of the Department's institutions, in the latter case a small grant being made towards the cost of books and apparatus.

A Scholarship is tenable for one year, but selected candidates must undergo a probationary course of one term (about three months). If satisfactory progress be made by the holder, the Scholarship may be renewed for a second, third, and in certain circumstances even for the fourth year, to enable the student to complete his course.

The Department do not undertake to employ, or find employment for, students at the close of the period of training.

Holders must devote their whole time to the course of study prescribed for them by the Department. Candidates should be between 18 and 30 years of age; must have been born in Ireland or have been resident in Ireland for three years immediately prior to the 1st September; and must have had substantial experience of practical work in connection with farming, gardening, the management of woodlands, or dairying and creamery management. The examination may be written, oral and practical. The subjects will include all the ordinary work of farms, gardens, woods, or dairies, as practised in Ireland.

The holder's ability to impart instruction will be gauged by the style of answers in both written and oral examination.

For Science and Technology.

A number of Scholarships and of Teacherships-in-training, tenable at the Royal College, are offered for competition among students of Science and Technology. Candidates must be not less than 16 nor more than 30 years of age. Holders of Royal Exhibitions or National Scholarships and present or past students of the Royal College of Science are ineligible as candidates. The Scholarships are of the value of £50 per annum and in addition entitle the holder to free instruction during the Associate Course, a maintenance allowance of 21s. per week for the session of about 40 weeks each year, and railway fare to and from Dublin.

Candidates awarded Teacherships-in-training undertake to pursue the full Associate Course with a view to becoming teachers of Science in Ireland and to refund sums paid to them as maintenance allowance and travelling expenses in the event of their leaving the college before obtaining the Diploma of Associateship.

The Associate Course extends over three years, the College session running from October 1st until June 30th each year.

Holders of Scholarships and Teacherships-in-training are required to devote their whole time to the work of the Associate Course, to comply with the regulations of the College, and to pass the examinations required for the Associateship. The continuance of the Scholarship or Teachership-in-training for a second or a

third session will depend upon the ability and application which the student has shown during the previous session or sessions at the College.

In 1910, 55 candidates competed for the 5 Scholarships and 5 Teacherships-in-training offered for competition.

For the School of Art.

The Department offers 3 Scholarships, tenable at the School of Art, for competition amongst students of Irish Schools of Art and Art Classes who propose to become Art Teachers in Ireland. The holders of all these Scholarships are entitled to free admission to all Day and Evening Classes at the School; a maintenance allowance of 21s. per week during the session (about forty weeks); and railway fare to and from Dublin. Scholarships may be renewed for a second session.

A limited number of Scholarships are offered for competition amongst apprentices, under the Goldsmiths' Corporation, who have attended the School regularly and punctually for at least one session. The Scholarships are of the value of £6 each, and entitle the holders also to free tuition at the School.

Admission free or at reduced fees is offered to students of the School who have paid fees for two consecutive sessions and who are preparing to become teachers, manufacturers' draughtsmen, designers, or Art workmen, providing they continue to make satisfactory progress in their studies.

CHAPTER XXV: THE MUNICIPAL TECHNICAL INSTITUTE, BELFAST.

Introductory.

The Municipal Technical Institute at Belfast is such an excellent example of organization, plant and equipment to meet the industrial needs of the city, that a statement of its main features is presented. The authorities of any city considering the question of building and equipping such an Institute would do well to procure a copy of the latest prospectus, which can be obtained on application to the Principal at the cost of 8c. plus postage. It is a volume of 350 pages, with detailed information, and most suggestive. Only the barest outline of very important features can be given in the limited space of this Report.

The work of the Institute was begun in 1900, although the present building was not opened until 1906. In the interval, the Principal conducted such work as could be overtaken and, with the members of the Staff which had been gathered together and others, devoted much time to the plans for a suitable building with its equipment. One commendable feature is the grouping of the rooms for each department, with office rooms for the staff in the group, the group itself being placed as far as practicable in proper relation to the department with which it has most to do.

A Trade Preparatory School is conducted in the Institute for boys from 12 to 15 years of age. About 140 boys were taking the course. The Principal approved of the plan of having the Trade Preparatory School in the Institute rather than elsewhere in the city.

He also stated that there were advantages from having Day and Evening Classes in the same building, using the same equipment, provided the whole was under one management and practically one set of heads responsible for each department. The attendance at the Day Classes in the Technical School has not become large enough to satisfy the wishes of those responsible. The attendance at the Evening Classes was over 4,000 pupils. The population of the city was 349,000 in 1910.

The keeping of useful records of technical students, and the methods followed in the compilation of these to make them of the greatest service, have been a difficulty. That matter has been studied carefully by Mr. Forth, Principal of the Institute. An article by him on the method in educational institutions in regard to the compilation of technical students' records, was published in the Journal of the Department of Agriculture and Technical Instruction for Ireland, Vol. VI., No. 3.

The Queen's University ofBelfast and the city Corporation have an agreement recognizing the Institute as a College in which students of the University may pursue a course, or part of a course of study qualifying for their degree

of Bachelor of Science (B.Sc.), Master of Science (M.Sc.), Doctor of Science (D.Sc.), or a diploma.

The Departments in which courses, or parts of courses, are recognized, and in which courses of study already are or may be provided are those of Mechanical Engineering, Electrical Engineering, Chemical Technology, Textile Technology, Architecture and Naval Architecture.

Scope of the Institute.

The chief object of the Institute is to provide instruction in the principles of those arts and sciences which bear directly or indirectly upon trades and industries, and to show by experiment how these principles may be applied to their advancement.

All departments are open to both sexes. The evening classes are suitable for persons engaged during the day in handicrafts or business, who desire to supplement and develop the knowledge and experience they have gained in the workshop, warehouse, etc. Apprentices, journeymen and others employed in the various industries of the city and district cannot fail to profit by the facilities for self-improvement now so liberally placed within their reach.

Intending Science and Technical Students are reminded that the successful prosecution of their special studies will be in proportion to their knowledge, at the beginning, of the elements of Mathematics and Drawing,

Students are required to consult with the teacher of the class proposed to be joined, and to obtain the teacher's initials to the Entrance Form, before applying at the office for the ticket of admission to the Class.

The Classes are open at the fees named to students from any district in which the Technical Instruction Act is in operation, provided that the regulations as set out in the Time Table of Classes are complied with.

Non-naturalised foreigners are charged fees higher than those set out in the Time Table.

Laboratory and workshop classes are open only to students in regular attendance at the corresponding lecture courses.

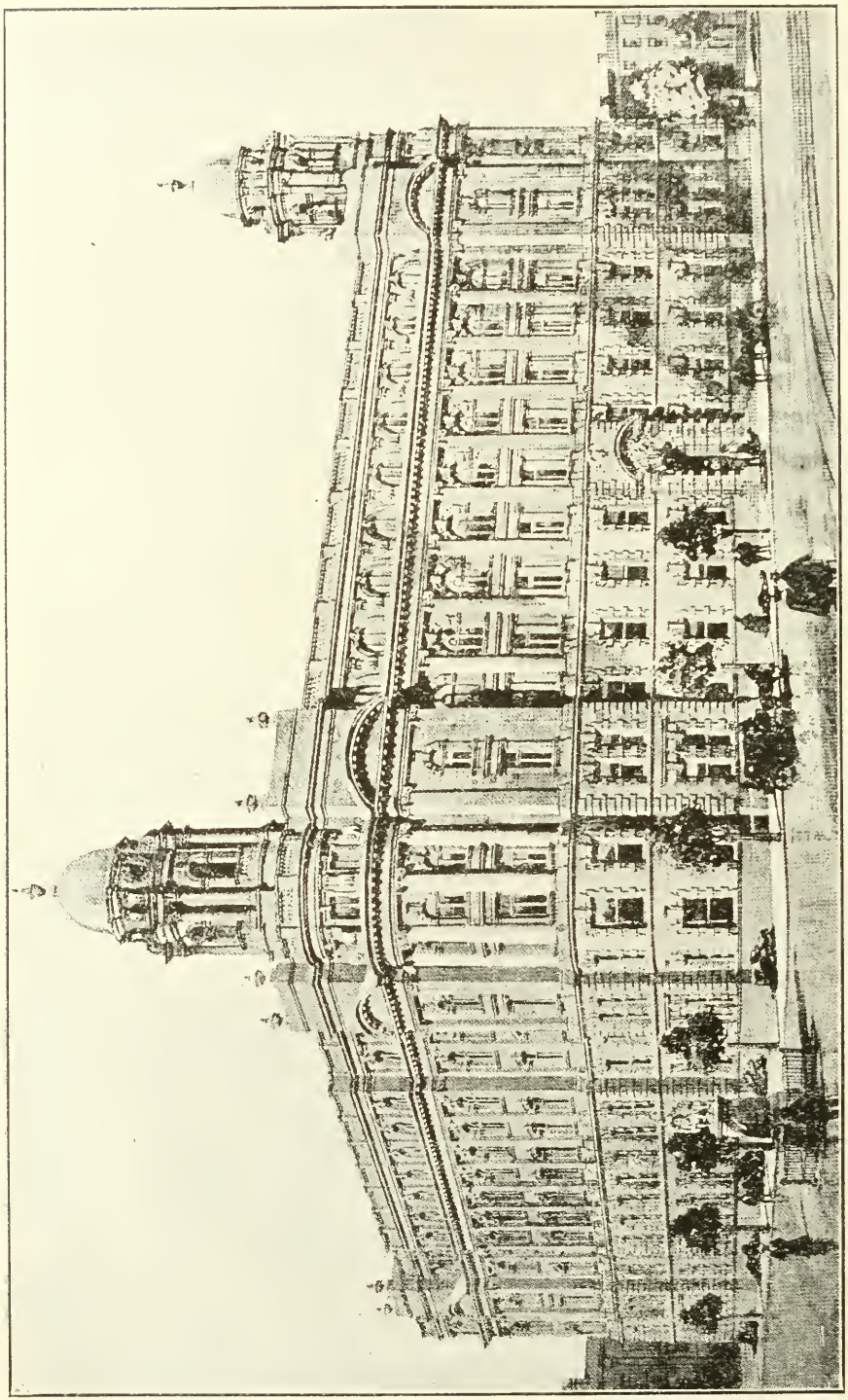
Equipment.

The Institute contains a full range of Classrooms, Lecture Rooms and Drawing Rooms, and is furnished with very completely equipped Laboratories for Mechanical Engineering, Physics, Electrical Engineering, Pure and Applied Chemistry, and with Workshops for Spinning and Weaving, Wood Carving, House Painting and Decoration, Typography, Lithography and Bookbinding, Baking, Cake Ornamentation, and other trade subjects.

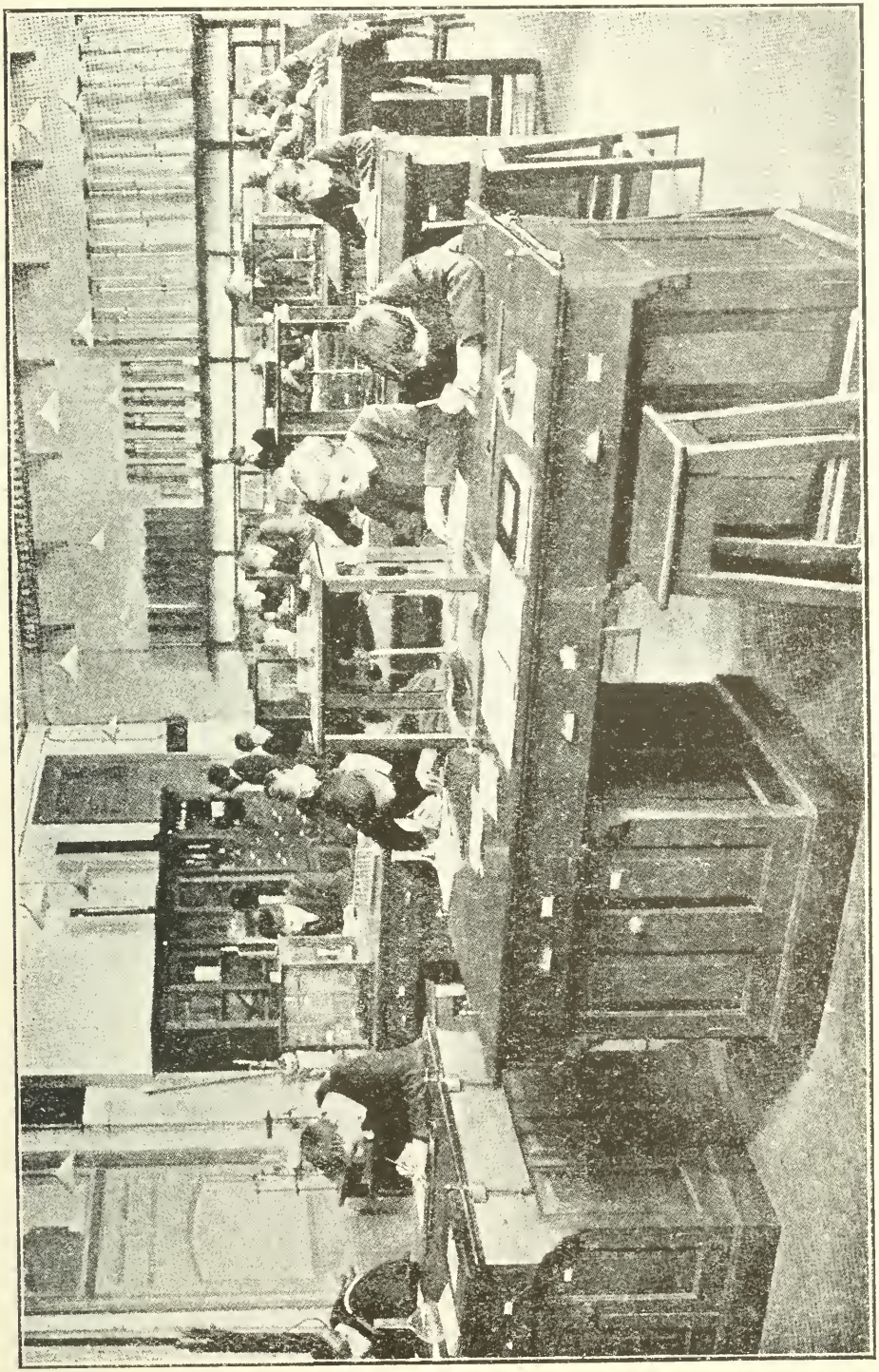
There are practice rooms for Cookery, Laundry work, Dressmaking and Housewifery.

The Institute also contains a completely equipped School of Art.

A Gymnasium, fitted up with the most modern appliances for physical training, has been installed.



THE MUNICIPAL TECHNICAL INSTITUTE, BELFAST: PERSPECTIVE VIEW OF THE BUILDING.



TRADE PREPARATORY SCHOOL: PHYSICAL LABORATORY.

TRADE PREPARATORY SCHOOL.

The Library and Technical Instruction Committee has established this School as a Junior Section of the Day Technical Division, the principal object of the School being to provide a specialised training for boys who are intended for industrial occupations. Whilst due regard is paid to the subjects of a general education, special attention is devoted to imparting a sound training in the elements of science, and in science as applied to local arts and manufactures, such as those which fall under the heads of Mechanical Engineering, Naval Architecture, the Building Trades and Textile Industries.

The complete course of instruction is designed to extend over three years.

With the object of making the school work as thorough as possible, the theoretical instruction imparted in the class-room is supplemented by practical work in the Laboratories, the Workshop and the Drawing School.

Boys who follow out this complete course will be in a position to enter upon their life work in the mill, factory or workshop with a sound preparatory training, and will have acquired that scientific habit of mind which will qualify them to take part in the development of the industries of the city, and later—when their school training has been reinforced by practical experience—to rise to positions of responsibility. Furthermore, youths leaving the School at the age of 16 or 17 to enter upon an industrial career will be fitted to continue their education in the higher classes of the Evening Division of the Institute, and to derive the maximum benefit from attendance at those classes.

Applicants for admission to the School must be *not less than* 12 years of age on the 31st May in the year of Examination, and must have been enrolled in the Sixth Standard of a National School for at least 12 months, or show that they have reached an equivalent educational standard. The entrance examination is held in June.

Outlines of Courses.

With a view of indicating the nature of the instruction given, the following outlines of the courses of instruction are supplied:—

First Year.—Mathematics, English, Drawing, Experimental Science, a Modern Language, Manual Training, Educational Gymnastics.

Second Year.—Mathematics, English, Physics, Chemistry, Practical Geometry, the Elements of Machine Drawing, Mechanics, a Modern Language, Art, Manual Training, Educational Gymnastics.

Third Year.—Mathematics, English, Physics, Mechanics, Mechanical Laboratory, Practical Plane and Solid Geometry, Machine Drawing, a Modern Language, Manual Training, Metalwork, Art, Educational Gymnastics.

Fees.—The fee to pupils who pass the Entrance Examination, but who are unsuccessful in obtaining Scholarships, is sixpence per week, payable weekly. Parents who wish to do so may pay a sum of £1 in advance to cover the year's instruction. Non-Scholarship pupils are required to provide themselves with books, instruments, etc., required (costing for first year's course about £1 5s.

The School is open from Monday to Friday, from 9.30 a.m. to 12.30 p.m., and 1.30 p.m. to 4.30 p.m. Punctual and regular attendance is considered

a first essential, for without this no satisfactory progress can be made. Pupils are required to attend during the hours specified, and deviations are not permitted.

In case of unavoidable absence or unpunctuality, a written explanation, signed by a parent or guardian, should be sent to the Head Master. All pupils of the School are expected to wear the school cap.

The work of the pupils will be tested by Examinations of the Institute, and of the (London) Board of Education; but the instruction will not be directed towards preparing pupils for nor will pupils be entered at the Examinations of the (Irish) Intermediate Board of Education.

Parents or guardians are required to enter into an undertaking not to remove pupils from the School before the end of the School Year in July. But should they not desire to comply with this Regulation, exemption may be obtained by payment of five guineas ($25.50) for the course of instruction.

DAY TECHNICAL COURSES.

The Courses have been established to provide a sound training in the science and technology of Mechanical and Electrical Engineering, the Textile Industries, and Pure and Applied Chemistry. The Courses give a suitable preparatory training to youths who aim at filling positions of responsibility as mechanical engineers, electrical engineers, spinners, manufacturers, manufacturing chemists, or in other industrial occupations.

Candidates must not be less than 15 years; must be prepared to pass an entrance examination and have a standard of education not lower than that of the Junior Grade of the Intermediate Board. A workshop training or other practical acquaintance with the branch to be studied is not required, but practical experience will be found a distinct help in following the programme of instruction.

Various opinions are held as to the best educational preparation for youths intended for engineering in its several branches. The instruction for the engineering departments has been planned with due regard to the recommendations contained in a special report on this subject.

The instruction is of University standard, and thoroughly practical. Students who have, previous to entering upon the Course, passed the Matriculation Examination of the London University, are prepared for, and should have no difficulty in taking, the degree of Bachelor of Science with Honours, in either Mechanical or Electrical Engineering.

The instruction does not consist merely of courses of lectures; the Institute is provided with well-equipped Laboratories and Drawing Offices specially arranged for extensive and thorough instruction in both the experimental and commercial aspects of the subjects taught. The teachers aim at keeping in touch with the industry to which the instruction is related, and visits to places of interest are arranged from time to time.

The programme of instruction extends over three years. In the First Year it is common to all the departments. In the Second Year it is specialised in certain subjects according to the department entered. In the Third Year it is almost wholly specialised.

The Course of Instruction is of 30 hours' duration per week, and the Session continues for about 40 weeks. Students attend from Monday to Friday, from 9.30 a.m. to 12.30 p.m., and 1.30 to 4.30 p.m.

Allocation of Time in Second Year.

The allocation of hours for the Second Year Course indicates the programme of instruction in each of the four departments. The subjects are treated in a similar way but in a more advanced manner during the Third Year.

Subjects.	Mech'l Engineers.	Elect'l Engineers.	Textile Students.	Chemical Students.
Mathematics	5	5	5	5
Applied Physics	.....	2	.....	2
Geometry	2	.....	.....	.....
Mechanical Drawing	3	3	3	3
Mechanics	1	.....	1	.....
Machine Shop Practice	3	3	.....	.....
Theory of Machines, Heat Engines, Hydraulics, Strength of Materials	7	.....	.....	.....
Electrical Engineering	2	6	.....	.....
Electrical Machinery	2	6	.....	.....
Textile—Raw Materials	.....	.....	1	.....
Spinning	.....	.....	3	.....
Weaving—Preparatory Processes	.....	.....	1	.....
Construction and Testing	.....	.....	2	.....
Design of Patterns	.....	.....	2	.....
Weaving	.....	.....	2	.....
Inorganic and Organic Chemistry	.....	.....	.....	4
Practical Chemistry	.....	.....	.....	8
Bleaching, Dyeing, and Finishing	.....	.....	1	3
Design	.....	.....	4	.....
English	2	2	2	2
German	2	2	2	2
Gymnastics	1	1	1	1
Total	30	30	30	30

Occasional Students.

With a view to meeting the requirements of a number of students who have applied for admission to the classes in the Day Department of the Institute, but who are not in a position (owing to business engagements and other reasons) to attend the Full Day Technical Course, it has been arranged to admit students to portions of the course, as e. g. to Lectures, Mechanical Drawing Practice, or Laboratory or Workshop Practice.

The fees for the Session are as follows:—

Lecture Class, one hour per week	£1 0 0
" two hours "	1 10 0
" three " "	2 0 0
Drawing Practice, two hours per week.	£1 5 0
" " three " "	1 10 0
Laboratory or Workshop Practice, each additional period of three hours	1 0 0

Special fees are applicable in the case of foreign students.

Day Course for Engineer Apprentices.

These classes meet one day per week (Monday) from the 11th September until the end of May. They are intended for Engineer Apprentices and Apprentice Draughtsmen, who are nominated by their employers. Several engineering employers in the city have given their apprentices facilities for attending these classes, and it is hoped that a similar privilege may be given by other employers.

Students are required to attend on Mondays throughout the Session. The instruction is given from 9.30 a.m. to 4.30 p.m., with an hour's interval for dinner.

Candidates for this Course must have reached the age of 17, and must give evidence of a satisfactory knowledge of Mathematics and Mechanical Drawing.

The subjects included in the Course of Instruction are chosen from the following:—Practical Mathematics, Heat Engines, Applied Mechanics, Practical Geometry, and Engineering Drawing.

The Institute authorities are prepared to furnish periodical reports to employers concerning the progress made by their apprentices, and also to notify employers of any absences or departure from conditions laid down.

The fee for the complete Course is £1 10s.

Day Courses for Printing Trades' Apprentices.

A Day Course in Typography has been provided for apprentice compositors who are nominated by their employers.

A number of printing firms give their apprentices facilities to attend these classes, and it is hoped that similiar privileges will be given by other employers in the printing trades.

In this course, instruction is given in English, Printing Trades' Calculations, and the Theory and Practice of Typography.

The practical instruction is conducted in the newly-equipped Case Room of the Institute. The equipment comprises the latest patterns of labour-saving frames and case-room furniture, and includes a carefully chosen range of type faces, borders, etc.

The class meets on Tuesdays from 2.30 to 6.30 p.m., commencing in October.

Home exercises are given each week, and it is a condition of attendance at the Course that students work the examples set.

Reports are sent periodically to employers, and any absence of apprentices is at once notified.

An examination is held at the end of the Course, and certificates awarded to successful students.

EVENING DIVISION.

This Division has a Preparatory Section organized with the object of ensuring that students should obtain a sound basis whereon to build up their subsequent studies in Science, Art, or Technology.

There is also an Introductory Section, in which the Courses of instruction are so arranged as to lead naturally to the Specialist Courses. The students are, as far as possible, grouped according to their occupations. Special introductory classes are provided in the departments of Mechanical Engineering, Electrical Engineering, Chemistry, Building Trades, Textiles, Commerce.

An outline of some departments is given hereafter. In the belief that an outline would furnish a useful framework from which to work out appropriate details for Canada, only the materials of such a skeleton or framework are presented.

Mechanical Engineering.

This Department provides instruction suitable for all grades of students in Mechanical Engineering, from those leaving the elementary school up to candidates for University degrees. The Courses are thoroughly modern, all unnecessary details of a purely academic character being eliminated.

The instruction is designed to afford a scientific training for all classes of students ranging from the young apprentice upwards. The student is led by easy stages from the most elementary to the highest branches, and the Courses present an opportunity for a high degree of training in the use of instruments, methods of measurement, calculation, reduction, drawing and designing, which are now, as the result of a better knowledge of principles, rapidly supplanting the old methods of arriving at engineering conclusions.

The object of the laboratory work is to train students in the practice of measurement of quantities—whatever their nature—which belong to the work of the engineer. The engineering industry is developing rapidly; extensive and often very costly experiments are constantly being carried out, so that in a shop which is thoroughly progressive every machine constructed may be looked upon as an experimental one. In order to grasp thoroughly the nature of it, and to enable young engineers to enter upon the experimental side of engineering, a laboratory training has become a necessity. The old method of training by class work alone has been found unsatisfactory. The recent great development in the methods of testing materials and machines has established this branch as an important part of engineering work, and this importance is increasing rapidly. The training necessary for such work is most efficiently obtained in a well-equipped laboratory in which the instruction is correlated with a course of scientific study.

Naval Architecture.

Properly equipped drawing and lecture rooms are now provided for the teaching of Naval Architecture. It is essential that students of this subject should follow out a regularly arranged course of study, and for their assistance the following outline schemes have been prepared.

1st Year.
- Practical Mathematics, 1st Year.
- Naval Architecture, Stage 1.
- Practical Plane and Solid Geometry.

2nd Year.
- Naval Architecture, Stage 2.
- Practical Mathematics, 2nd Year.
- Applied Mechanics, Stage 1.

3rd Year.
- Naval Architecture, Stage 3.
- Practical Mathematics, 3rd Year.

In connection with these classes there are well-finished models illustrating the laying off and details of shell plating, etc., the models being used to illustrate the parts of the laying off and practical work done during the Course.

In the Elementary Stage instruction is given in detail drawing of parts of a ship's structure. In the Higher Stages students may prepare designs for passenger and cargo steamers, midship sections to pass the principal classification societies, and more advanced structural drawings, fairing lines, stern expansion, etc., etc.

Physics and Electrical Engineering.

This Department has for its principal object the provision of complete courses of instruction in the theory and practice of the various branches of Pure and Applied Physics and of Electrical Engineering.

In drafting the programme, special attention has been given to providing for the requirements of the following, amongst others:—

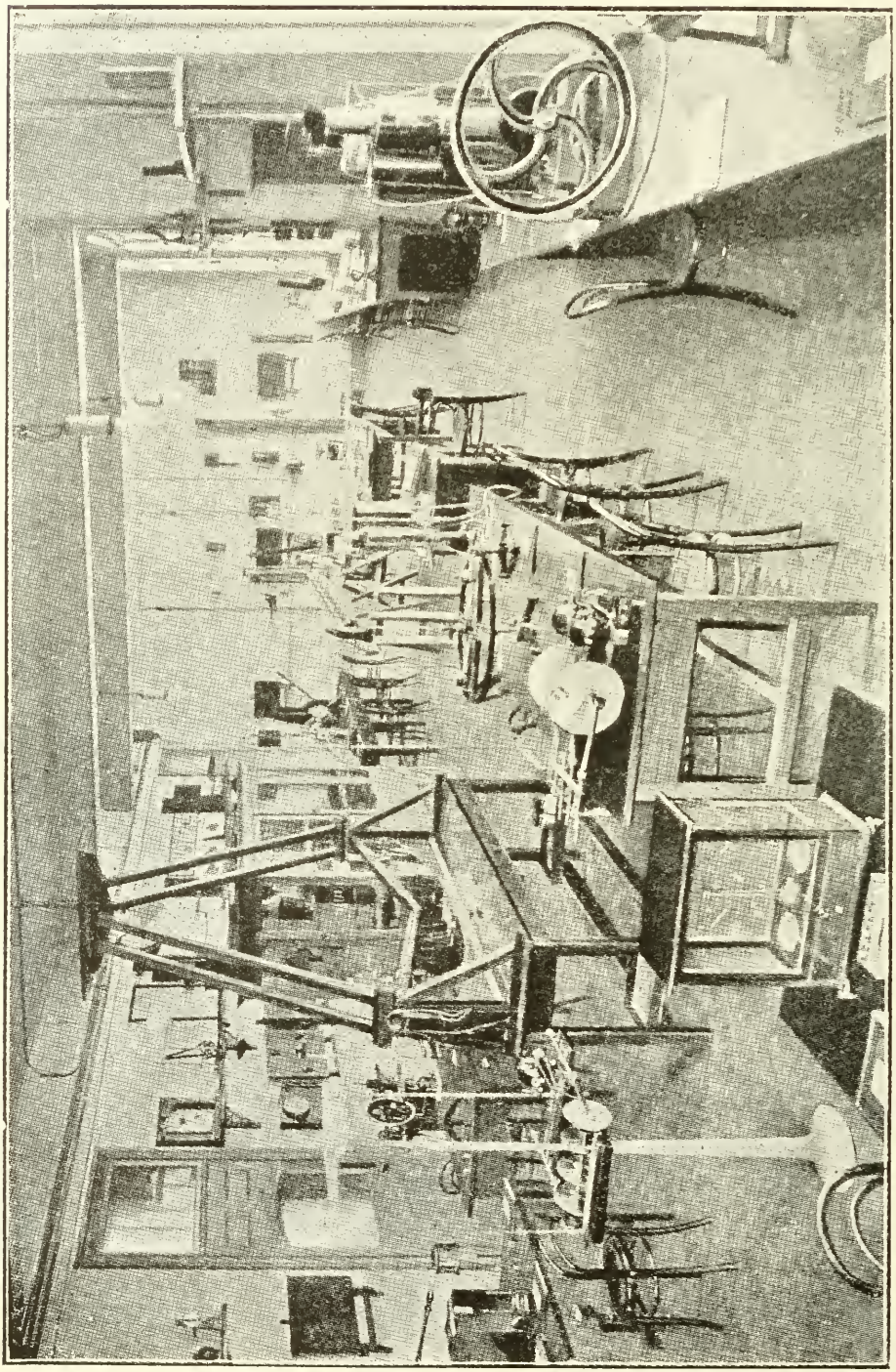
(1) Electrical Engineers; (2) Students whose main requirement is a knowledge of Experimental Science and Pure Physics; (3) Teachers in National Schools and in Secondary Schools desiring to obtain the qualifying certificates of their respective Boards; (4) Students preparing for the B.Sc. degree of the London University in the Departments of Science or of Electrical Engineering; (5) Telegraphists, telephonists, wiremen, and persons engaged in the inspection of buildings, sanitary work or insurance risks; (6) Those occupied in trades dealing with electro-deposition, or other branches of electro-chemistry.

Building Trades and Furnishing Trades.

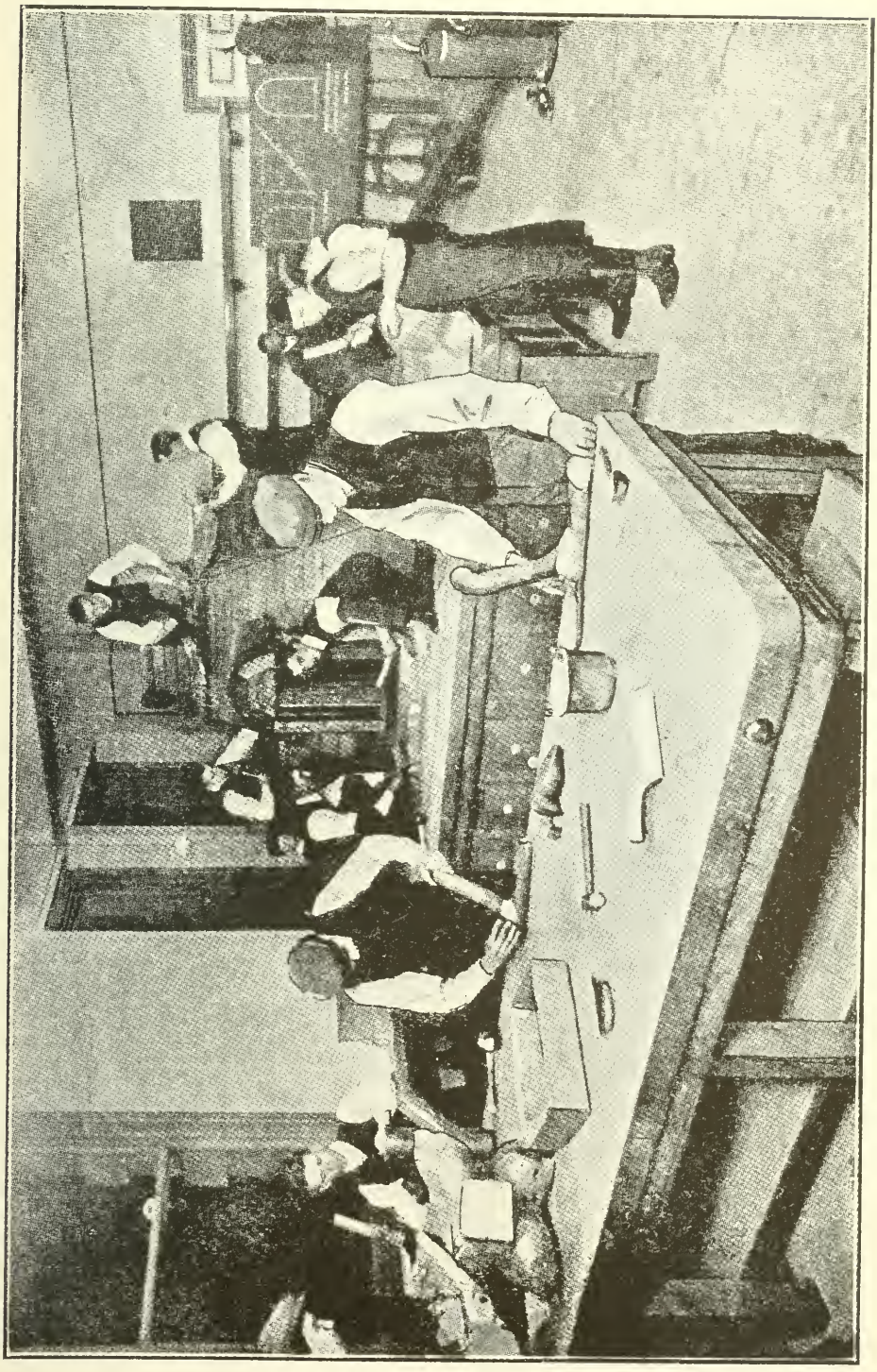
The programme of this Department includes a wide range of subjects, covering the leading branches of the Building and Furnishing Trades.

Considerable freedom is given to the student in selecting his Course. In imparting the instruction in the various classes the special requirements of the trade student and the professional student are constantly kept in view.

In the practical classes instruction is provided in setting out and constructing intricate pieces of work; students are enabled to gain thereby that experience and facility in setting out, and that skill in manipulation which will enable them to undertake such work on their own responsibility.



MECHANICAL LABORATORY: MUNICIPAL TECHNICAL INSTITUTE AT BELFAST.



BUILDING TRADES—PLUMBERS' WORKSHOP: MUNICIPAL TECHNICAL INSTITUTE AT BELFAST.

In addition, students are taught to take off the quantity of materials required, to prepare prices for work in the various trades, and to write reports in connection with building operations.

Students preparing for the various examinations in Building Subjects find the instruction given in these classes exactly what they require.

The equipment comprises five workshops, two lecture rooms, and two drawing offices. The lecture rooms are fitted up in a manner suiting their purpose, and contain charts and diagrams illustrative of the lessons given in the various classes.

EQUIPMENT.

The Building Construction Drawing Office designed to accommodate over 50 students, contains various models and diagrams of building construction details, as well as actual specimens of numerous building materials, and is in all respects planned for the convenience and comfort of the students.

The Joiners' Shop is planned to accommodate about 25 students; specially fitted up and equipped with all tools and appliances in connection with the joinery and cabinet making trades. A feature of the equipment of this room is an exceptionally fine set of models of wreathed handrails, for the use of students in the handrailing class.

The Wood-carving Room contains 23 single work benches, fitted with screws and appliances for holding the work. A varied collection of examples of wood-carving and plaster casts affords the student a wide range of selection.

The Painters' and Decorators' Workshop is fitted up in the most approved manner with work benches and easels. The room contains numerous examples of painting, decorating and lettering. Complete sets of tools used in the various branches of this trade are displayed in cases outside this room.

The Plumbers' Shop is a spacious room capable of accommodating 50 students. It contains a model roof with parapet, gutters, gutter boxes, steps, diagonals, chimney, flats, skews, curb roll, circular dormer, storm window, entablature, and other details found on the modern roof; thus the student receives practice in fixing lead, copper, zinc, tiles, slates and other roof coverings. On the walls are arranged tanks, cylinders and boilers for experimental work in hot-water fitting. There are also complete models in glass of the various systems of domestic hot-water supply, which indicate clearly the circulatory movements and convection currents throughout the entire systems.

Textile Industries.

The object aimed at in the lecture Courses on Textile Subjects is to provide a thorough technical training in each Course. The Courses have been planned so as to meet the requirements of as many different sections of the textile industry as possible, due regard being paid to the attainment of efficiency and the avoidance of overlapping.

The lecture and class rooms are fitted up with every convenience for giving instruction in each branch of the work.

This Department is equipped with the most modern and approved types of textile machinery.

Flax Preparing and Spinning.—This plant consists of a complete set of machines and apparatus for roughing, heckling by hand and machine, also speading, preparing, roving and spinning machinery, suitable for linen yarns. Flax tow yarns can also be produced. The plant includes full-sized tow-carder, tow-comber, preparers, tow-rover, and wet and dry spinning frames. Twisting and reeling machines of two types are available for use and demonstration.

Hand Looms.—There are 26 hand looms by various makers; these comprise looms of different reed widths from 16 to 30 inches. The looms are mounted with a variety of warp shedding mechanisms, including treadle, witch and jacquard. Each jacquard machine, of which there are 13, is also mounted in a different way. All the foregoing looms are fitted up with rising and falling boxes at each end of the "lay," which makes it possible to produce a very considerable variety of linen and other woven fabrics.

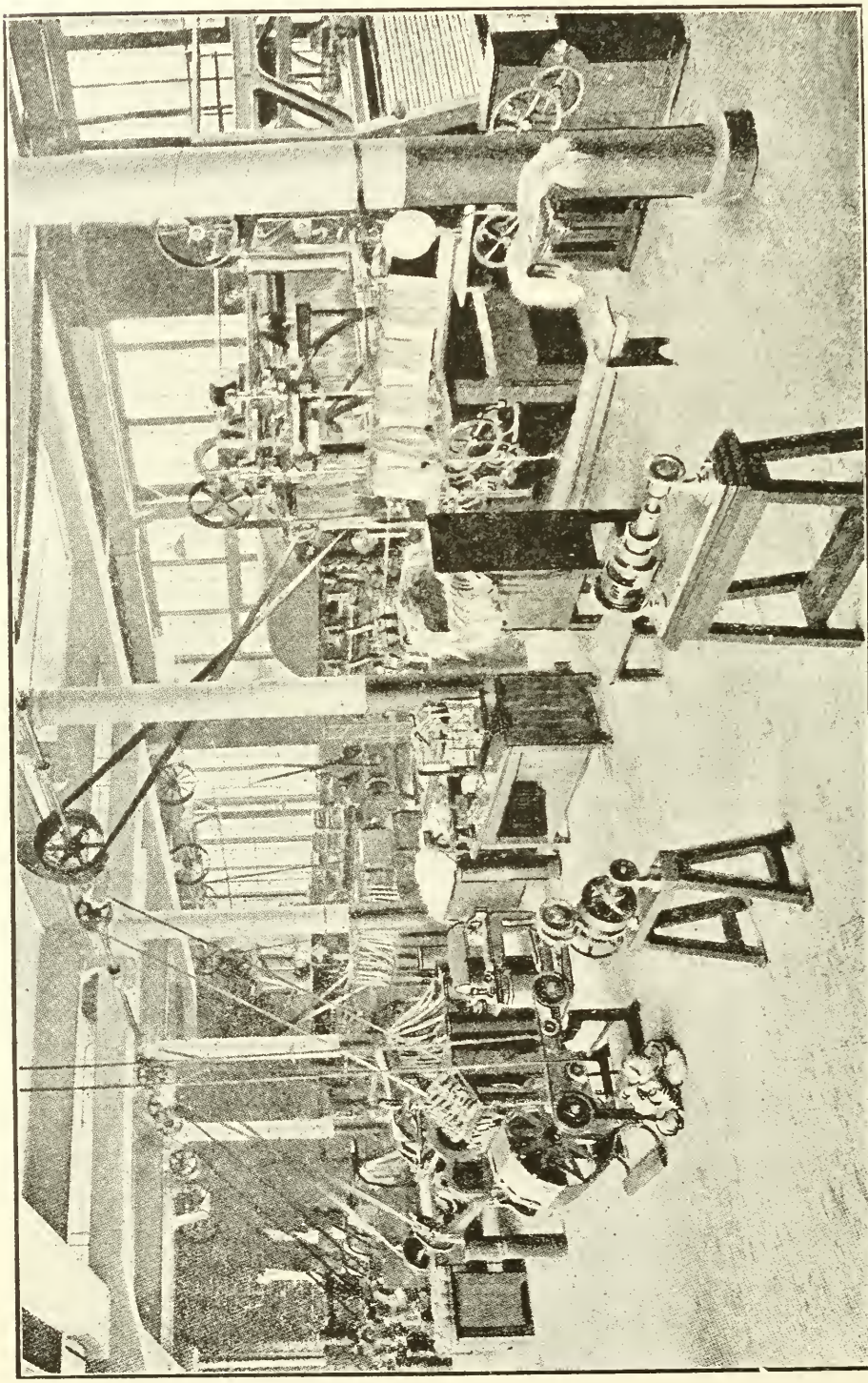
Weaving Preparation, Twisting, Winding, Card Cutting, Lacing Machinery, Etc.—Machinery and apparatus are provided for winding warp and weft yarns, warping by hand or machine, linen dressing and Yorkshire dressing and beaming. Card cutting and lacing machinery are also included.

Power Looms.—The Department is supplied with a considerable quantity and extensive variety of power looms and accessories. Every variety of linen fabric, together with all the chief varieties of wool, cotton and silk can be manufactured. This section of the equipment comprises 16 single shuttle looms of dissimilar widths, 4 of which are automatic pirn or shuttle changers. The looms are variously fitted up with negative (inside and outside) and positive shedding tappets; single and double acting and cross border dobbies; single and double acting, twilling and cross border jacquards of ordinary and fine pitch types. The systems of harness-mounting are comprehensive, including "London," "Norwich," pressure or common, split, leno and carpet methods for "repeating," "lay over," and cross-border patterns. There are also 5 even pick and 8 odd, or pick and pick at will, shuttle box mechanisms which are also variously mounted and capable of producing a wide range of woven products. A 4-shuttle positive pick tape loom together with a considerable number of working models completes the power loom section of equipment.

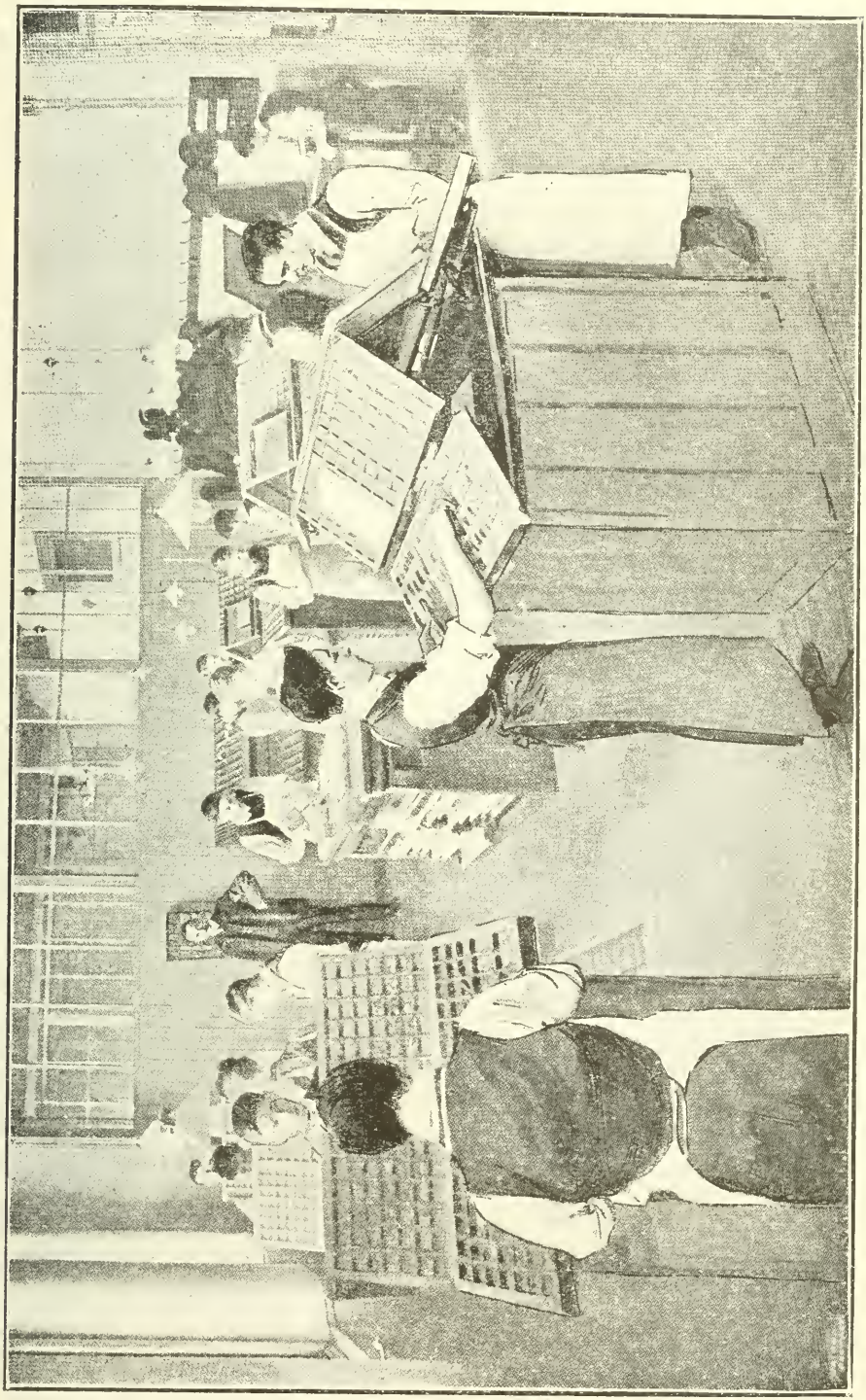
The Textile Testing Laboratory is equipped with instruments, apparatus and machinery for :—

Testing strength and elasticity of yarns; testing strength of woven fabrics; conducting microscopic tests of the various textile fabrics; weighing and testing correct weight and length of yarns; testing the twist in yarns; examining yarns for evenness; conditioning; conducting various chemical tests; determining relative humidity.

NOTE:—A special feature in the Weaving Department was as follows: Every student when he enters receives a number, indicating some experiment or work he is expected to do. He then finds an instructor in the Weaving Room who gives him the necessary information, guidance and help to get started on his project of work. Hand looms are used at first, to give all the students a



FLAX PREPARING AND SPINNING ROOM, MUNICIPAL TECHNICAL INSTITUTE AT BELFAST.



PRINTING TRADES DEPARTMENT—COMPOSING ROOM: MUNICIPAL TECHNICAL INSTITUTE AT BELFAST.

knowledge of the fundamental principles of weaving. There is a large equipment of hand looms of different makes. After experience with these, the student passes on to the use of the power machinery for flax and linen weaving. A student who attends during 4 years will acquire a knowledge of all these different machines, and a clever workman is often able to adapt something from one machine to another, and to improve the work of the one he is on at the factory where he is employed.

Public Textile Testing and Conditioning House.

This has been established in connection with this Institute with the approval of the Department of Agriculture and Technical Instruction for Ireland. It is carried on under the auspices of the Belfast Corporation, and is controlled by the Library and Technical Instruction Committee.

The functions of the Testing House are the examination of textile materials with a view to ascertaining and certifying their true weight, length, condition, and strength, and in addition, the carrying out of such other tests and investigations as may be required in order that spinners, manufacturers, merchants and others, desirous of having tests conducted and an Official Certificate issued, may effect their object through the medium of an independent public authority.

The strictest secrecy is observed with regard to all work sent to the Testing House; as a consequence, the Testing House is not open to the public.

Printing Trades.

The Library and Technical Instruction Committee has established a Printing Trades Department, and has set aside an entire floor 92 ft. by 23 ft. in the extension of the building recently completed. The rooms are exceptionally well lighted, both in the day time and at night.

It will be the special object of these classes to provide a full range of training, so that the student who is limited to one kind of work in his daily occupation will have the opportunity of extending his knowledge to the other classes of work occurring in his trade. The instruction will thus supplement the practical training of the workshop, and provide the means of raising to a higher level the standard of craftsmanship in the various trades.

Technical instruction will be given in the following sections of the Printing Trades, viz.:—

Typography; The Linotype; Machine and Press Work; Designing for Lithography; Lithographic Printing; Bookbinding—Forwarding and Finishing.

The instruction in each branch will be both theoretical and practical. The programme will include such allied subjects as are necessary to render the instruction thoroughly efficient.

The classes will in general be held in the evening, but day classes will be conducted in those subjects for which there is a sufficient number of students.

For the session of 1911-1912 the classes dealt with the elementary stages of the various subjects. As a higher standard of attainment is reached more advanced Courses will be introduced into the programme.

Each Course will call for attendance on two evenings per week.

Day Classes for Apprentices:—At the request, and with the cordial assistance, of a number of employers in the printing trades, the Committee has established an afternoon Course of instruction for apprentice compositors.

Various Trades and Industries.

Under this Department come the Baking Trades, Confectionery, and Tailoring Trades.

Natural Science.

Under Natural Science are taken up, Botany, Biology, Physiology and Hygiene, and First Aid to the Injured.

Pure and Applied Chemistry.

This Department provides classes which will suit almost anyone who requires a knowledge of chemistry in his daily work, whether he be engaged in a chemical trade or preparing for a profession.

Modern views on the teaching of chemistry require that fully as much attention shall be paid to laboratory work as to theoretical instruction. The Chemical Department will be found to be adequately equipped for giving practical instruction in all grades of chemistry.

The two lecture-rooms, capable of accommodating 100 and 60 students respectively, are provided with large and well-fitted lecture-tables, fume cupboards, lantern and diagram screens, etc. Between them, and accessible from both, is the preparation-room. The lecture apparatus, the collections of specimens, of lantern slides, and of diagrams are very complete.

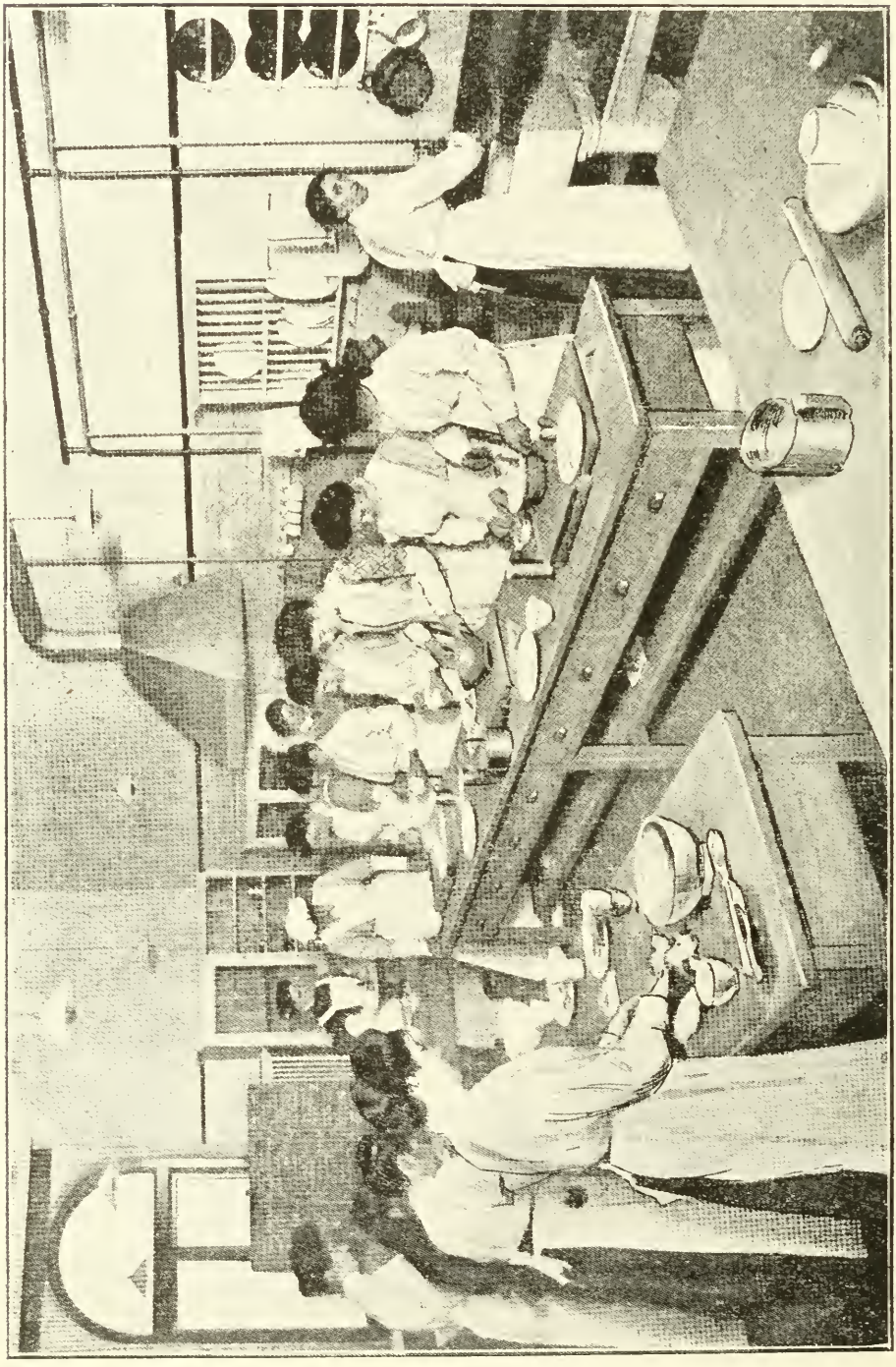
Laboratories:—(1) The main Chemical Laboratory contains 80 working benches, and has separate locker accommodation for over 200 students. Fume cupboards, drying ovens, evaporating niches, and distilled water plant are provided, and there are special benches for furnaces and glass-working. A balance-room and small store for apparatus open off the laboratory.

(2) A small Chemical Laboratory, similarly equipped to the above, is provided in connection with the Bleaching and Dyeing section of the Department.

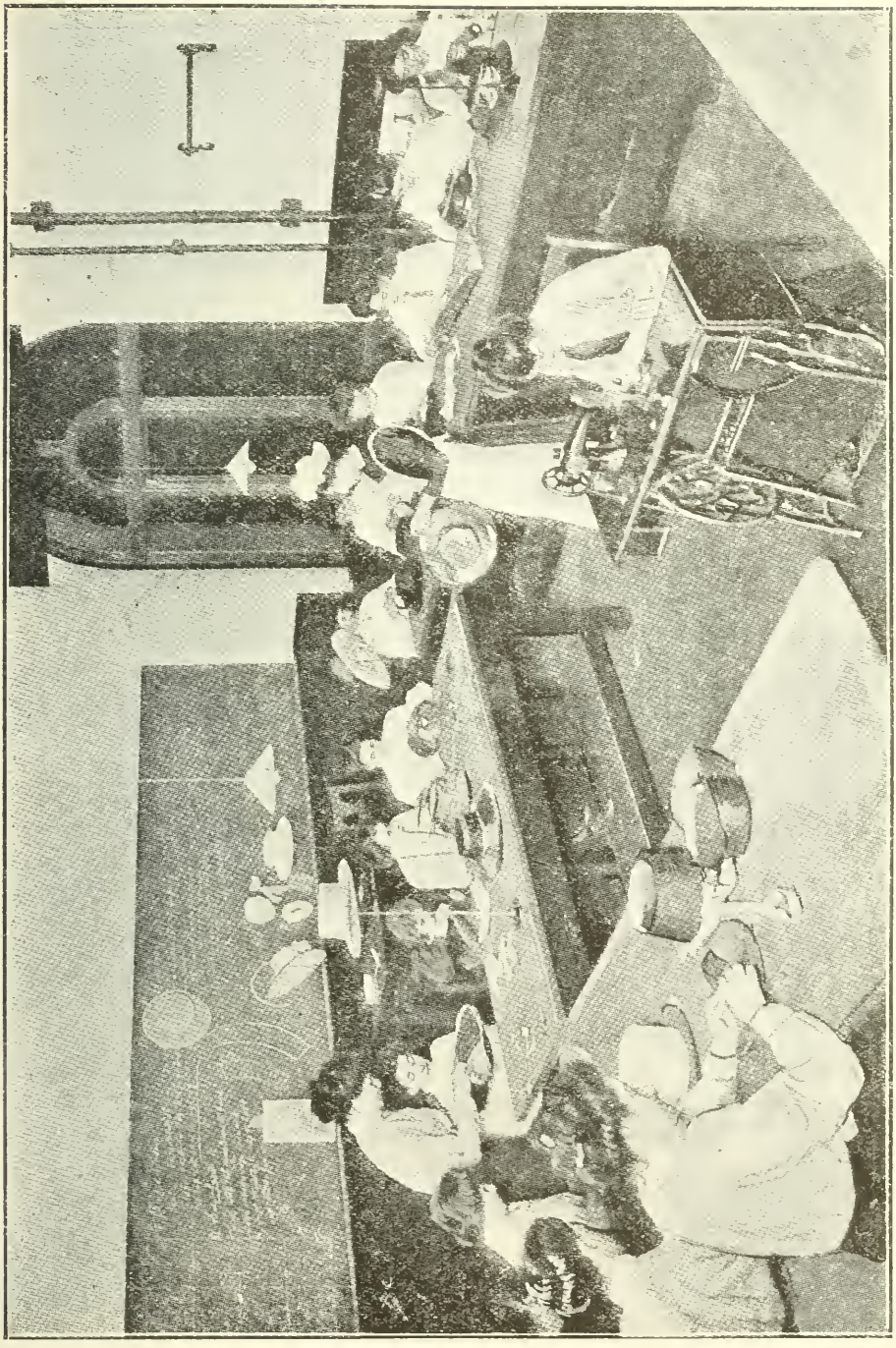
(3) The Bleaching and Dyeing Laboratory is equipped with 16 sets of steam-heated experimental dyebaths, used for carrying out small-scale experiments in dyeing, scouring, etc.

(4) A Finishing and Laundering Room has just been added to the Department. This contains additional machinery for the bleaching of yarn, and complete plant for the finishing of textiles and the study of laundering problems.

(5) A Laboratory has now been fitted up and set apart for the non-chemical work of the Pharmaceutical section.



COOKERY CLASS: MUNICIPAL TECHNICAL INSTITUTE AT BELFAST.



Millinery Class: Municipal Technical Institute at Belfast.

Department of Commerce.

The object of this Department is the provision of systematic Courses of practical instruction in the technique of Commerce. In the classes students are able to acquire that technical knowledge and specialised training which are necessary for present-day commercial administration. Whilst class work cannot provide the natural aptitude or the will-power and perseverance upon which success in business largely depends, it does undoubtedly develop the first-named quality and stimulates the others. The greatest efficiency cannot be attained without a systematic study of commercial subjects, to provide opportunities for which is the aim of the Department.

The rooms have been specially adapted and equipped for commercial instruction. An adequate supply of suitable apparatus, including the most modern time and labour-saving devices, has been provided, and the environment of a well organized business house has been reproduced, as far as possible. The Institute Library is available for students, with books and magazines of much service to them in their studies. The various classes are well provided with useful teaching auxiliaries such as models, charts, maps, etc., and the lantern and gramophone are also used as opportunity offers.

Owing to the development of commerce and the increase in specialism in commercial occupations, the greatest efficiency in these occupations can only be attained by students learning thoroughly the technique of their own and allied businesses. For this reason the Course system has been introduced. In order to economise time and effort, a student who wishes to make progress in his commercial education should undertake a carefully arranged Course extending over about 3 years. It is not deemed possible to lay down in advance suitable Courses of study for all students, but typical Courses appear in the Prospectus.

The Department offers instruction in a wide range of subjects, and the number of subjects is to be increased as the demand arises. The needs of both junior and senior students have been considered and arranged for, and it is possible to prepare in these classes for almost any commercial position.

An Introductory Course, covering instruction of a general character, has been arranged for students who are not yet prepared to take up a specialized Course. Junior students are recommended to consider carefully their requirements before entering upon a course of study. They should remember that it is only on a satisfactory educational foundation laid in the elementary classes that a student can hope to attain success in the advanced Courses.

Classes in advanced subjects have been increased in numbers and variety. There is to-day a great demand for persons who can efficiently discharge the duties of the higher and more responsible positions in business. To fulfil these duties in a satisfactory manner a wide and liberal training is necessary, as well as an extended outlook. To meet this demand the work of the senior classes, whilst providing technical knowledge of an advanced character, aims at enlarging the student's conception of commercial organization, and training his mind to analyze new commercial situations.

The necessity of keeping the work as practical as possible, by maintaining a close connection with business administration and developments, is never lost sight of; and to this end much of the instruction given in the Department is entrusted to teachers and lecturers who are themselves engaged in business.

THE SCHOOL OF ART.

The objects of this School, which is a part of the Municipal Technical Institute, are to give, by carefully arranged and varied Courses of study, a thoroughly practical knowledge of Design, Painting, Drawing, and Modelling, especially in their application to the various technical processes of manufacture and handicrafts, and in their relation to Architecture. It furnishes useful training to those intending to work as architects, designers and craftsmen, and assists those who wish to follow up Design in its bearing upon pictorial composition, such as book decoration, book illustration, and wall posters.

In addition, it is the object of the School to assist those who desire to make Art a part of their general education, and to spread a knowledge of Art and the appreciation of Art work; also to give facilities to those wishing to follow Art as a profession, or to include it in their general qualifications as teachers in Public, National, Art, or other Schools.

The special needs of the City of Belfast are steadily kept in view, so that the public interest in Art work of all kinds may increase, and that the portion of its commerce and industry dependent more or less on the arts of Drawing, Design and Handicraft may be benefited.

Explanation of the Courses.

The stages of instruction are arranged progressively, and students are required to conform to the Course prescribed for them. The Courses are made to meet the requirements of the students and to train them for their respective professions, every consideration being given to individual preferences and capacities. The classification of students rests entirely with the Head Master, and intending students who already possess some knowledge of drawing will be admitted to the Courses at a point suited to their abilities. They may be required to pass an entrance test, and are advised to bring specimens of their work when applying for admission, in order to facilitate classification.

The Three Grades or Stages.—The instruction is broadly divided into *three grades or stages*, and a student passes from a lower to a higher stage on fulfilling certain conditions to the satisfaction of the Head Master, who, along with the teacher in charge, periodically examines the work of individual students. Generally the changes take place about every three months.

The three Grades or Stages are:—(1) Preparatory, (2) Elementary, (3) Advanced. These are carried on during the day and also in the evening.

The Preparatory Course comprises work equal to what would be expected in the upper classes of elementary schools, in evening continuation drawing classes, or in the junior classes of secondary and private schools and colleges.

The work done in this Course consists of short time studies completed at each lesson, supplemented in some cases by home-work, based on the class work.

Intending students who have sufficiently covered this Course along with their general education, will immediately pass to the next stage.

The Elementary Course is equal to the upper grades of Secondary Schools working under the Department's new programme, but is somewhat more extended. It is also similar to the general Courses provided in evening Art classes in smaller towns, or in branch Art classes in larger towns. The work in this Course is of a general character and covers the foundation of all the higher branches of Art work. It will be found suitable as an adjunct to a good general education, and as a help in any division of life's work; the variety of work will enable the student to discover the particular line he or she would care to follow up in the higher branches of study. The Course will be helpful to students of various stages of science and technology, such as textiles, and it forms a Course necessary to be mastered as a minimum qualification for all teachers in National, Intermediate or Private Schools.

Short studies will be completed at each lesson, but more finished studies carried on over a lengthened period may be made by competent students. In some cases the work may be supplemented by home work.

In the *Advanced Course*, the provision made in each section permits students to continue their work and studies to a very advanced stage. A few particulars from Section 2 indicate the scope of all the sections. In addition to the lecture classes in the Principles of Design and the History of Applied Art, there are practice classes for Advanced Design; Figure Composition; and Artistic Handicrafts, as follows: (a) Artistic Handicrafts (not requiring special equipment); (b) Artistic Enamelling; (c) Artistic Metal Work; (d) Artistic Needlework; (e) Stained and Leaded Glass; (f) Lace-making; (g) Writing, Illuminating and Lettering.

CHAPTER XXVI: THE ARTANE INDUSTRIAL SCHOOL.

One of the institutions in the vicinity of Dublin, visited by the Commission, was the Artane Industrial School for boys, conducted by the Christian Brothers. Industrial Schools of this type are in a class by themselves, and are not to be considered as constituting a part of the industrial and technical education conducted under the Department of Agriculture and Technical Instruction. However, as there are a number of similar institutions in Canada, it has been thought appropriate to include a brief statement regarding this school, which impressed the Commission most favorably.

The Irish Industrial Schools Act became law on the 29th May, 1868. Industrial Schools in Ireland are strictly denominational. They are established either exclusively for Catholics or exclusively for Protestants. There are 21 for boys and 46 for girls, and one mixed. Of these 18 are for Roman Catholic boys and 3 for Protestant boys; 43 are for Catholic girls and 3 for Protestant girls. The Industrial Schools in Ireland are not to be confounded with Reformatories. The latter presume the juveniles to be guilty of some offence, whereas children are sent to the Industrial School because of destitution, want of proper guardianship and similar causes.

Workshops for Boys.

The Artane School was certified, in 1870, as suitable for the reception of boys. At the time of the visit of the Commission there were about 800 boys at the institution. The institution has a farm and many of the boys are trained for agricultural pursuits. From time to time workshops for various occupations have been added, until now there are 12 workshops in active operation. These include a workshop for each of the following departments:—cabinet making, painting and decorating, house carpenters, weaving, cart and wheelwrights, tinsmiths, tailoring, fitters, boot and shoe making, flour milling and baking, harness making, forging shop.

Apprentices in Junior Department.

In a juvenile workroom printing is taught; and the repairing of the clothes of the boys is taught systematically and carried out efficiently to cover the needs of the institution. A feature of the instruction in this room is worth mentioning. Here all the young boys begin their education in practical work by mending clothes, darning, knitting and making new garments for the boys of the school. What is known as the "dual system" was in full swing among the busy little workers. The older pupil was called the "master," and was

assisted by an "apprentice." After one year the apprentice in turn became master and took an apprentice. The older boy has in each case a younger boy in training, helping him to understand and use the various machines. The boys in this Department were from 6 or 7 to about 12 years of age.

Trade Teaching on a Commercial Basis.

After the general work in the juvenile workroom each pupil is passed into the department of the particular trade selected by or for him. The boy is never coerced into any particular trade. The selection is an advisory one, made only after a careful study of his nature and consideration of his parentage and the occupations of his relatives. After he is put to a trade he is not allowed to change to another.

Instances from one or two trades illustrate the range of work undertaken in each of the trades. The boys make their own clothing "from the sheep's back to the boy's back," as it was expressed. They also weave their own blankets. Another instance: the school grinds its own wheat, some of which it buys from the neighbouring farmers and some of which it imports.

The output from some of the trades is sold in the usual way of business, and the excellent work had won for the school a good name. In the tinsmiths' department the boys were filling a big order for oil cans for one of the railways. In the cart and wheelwrights' department, wheelbarrows and carts were being repaired for neighbouring farmers and others.

Equipment, Discipline, Physical Training.

The equipment of each department on the industrial side was quite suitable for the training of boys to be competent workers in the trades concerned. The keenness of the boys in the work of the various departments was an outstanding feature; and discipline in the industrial department was evidently maintained not by compulsion, but by intelligent interest.

There are 11 school rooms in which the boys go through the ordinary school course. In this department the boys are able to earn grants paid by the Board of Agriculture and Technical Instruction for Drawing. There is also a three years course in Manual Instruction to which each boy devotes 3 hours per week. All the boys go through these classes, irrespective of the trade they propose following.

The school is equipped with a theatre, a concert hall, infirmary, chapel, and commodious dining room.

Much attention is paid to physical training for the development of the boys. Opportunity is provided for supervised play and games. For a number of years the boys had a renowned football team, which won such a surfeit of prizes that they have now given up going out for contests. There was also an instrumental band of between 70 and 80 boys, which had such renown that it was taken over to Meynooth when the King visited there. An immediate result, from the music, was evident in the marching of the boys, their going into and being seated in the dining room, etc.

The appointments of the bathroom, containing 52 shower baths, enabled a set of boys to receive their benefit in 20 minutes. The arrangements provide privacy for the boys and for expedition in bathing. The appointments and condition of every part of the institution were noteworthy for the cleanliness and orderliness which prevailed.

Character Building at a Shilling a Day.

Considering the class from which these boys were drawn—waifs and strays—the boys had a remarkably healthy, happy and vigorous appearance. Ruddy cheeks and vivacity of movement bespoke wholesome development. The atmosphere of apparent contentment, interesting work, quick obedience to directions, were all indicative that the general education made for character-building concurrent with the teaching of particular trades under the care of teachers who were specialists in those trades.

When a boy leaves the institution he receives a small outfit consisting of two suits of clothes, with underclothes, etc. Considering the excellence of the conditions provided, and the results in those matters which have been referred to, the efficiency of the business administration is evident from the fact that the whole cost of the institution amounts to only about one shilling per day per boy. That was possible only because the work on the farm was done largely by the older boys, and a certain amount of food came from that source. The work of the boys in the industrial department also brought in some revenue.

After going over the institution, one could not help being impressed with the thought that the training received by these boys—originally waifs and strays—gave them a more thorough and suitable preparation for living and working than is obtained by most boys whose parents are in relatively poor circumstances. The kind of work done by the boys, and the atmosphere in which it was done, kept awake the interest of the boys themselves and caused it to pervade all school work. One retains a sense of grateful appreciation of the labours of the 27 Brothers, and their corps of assistant workers, on behalf of the young unfortunate, fortunate, lads who come under their care.

DENMARK.

CHAPTER XXVII: THE COUNTRY AND ITS PEOPLE.

Introductory.

Denmark is a country whose geographical position, area and population permit it to be thought of as a whole in such a way that lessons from the development of its agriculture and rural education may be understood. It consists of the peninsula of Jutland and of a number of islands in the Baltic Sea. The area is about 15,500 square miles. Its population in 1911 was 2,757,076, almost wholly Scandinavian, only 3 per cent being foreign born.

The area of land in farms is about eight million acres (8,177,169), and a good deal of it is of indifferent quality. The rural population amounts to 20 persons per 100 acres.

Outside of the city of Copenhagen, which contains about one-fifth of the total population of the Kingdom, three-fifths of the people live in the country itself, and the other fifth in the country towns. About 25 per cent of the population depend upon manufacturing and building industries. The principal items are machinery, pottery, paper and bricks. The number of beet-root sugar refineries is increasing, and breweries and distilleries are decreasing.

The climate resembles that of the eastern coast of Great Britain; and for crop-growing it is not greatly different from that of eastern Canada. The winter is less severe in temperature than in Canada, with a much lighter snowfall; but is scarcely less prolonged or taxing on comfort, by reason of the prevalence of winds and the relative humidity of the air.

The Appearance of the Farms.

The land has generally a slightly rolling surface, and the absence of fences gives it an aspect uncommon in Ontario or Quebec. Everywhere the cattle and horses and a few sheep are tethered. In summer they graze usually upon sown crops and not upon permanent pastures. To move the animals three or four times a day and to water them involves a good deal of labor. The Danish farmer does not mind that. He seems to regard his farm as a factory for the turning out of valuable products from which he derives and retains reasonable profits. Evidently he does not count a large area of land either necessary or conducive to the profits of his business, unless he does enough business and has labor of sufficient volume to occupy and use the land to its full extent.

The fields observed were generally reasonably free from weeds, and the crops were even in stand, giving evidence that the farm work had been well done. Fields of clover were conspicuously numerous, and alfalfa was seen occasionally. The crops of mangolds and potatoes were abundant and looked particularly well. Within the last quarter of a century the area planted with root crops has increased from 46,000 acres to over 600,000 acres, chiefly in mangolds for cattle-feeding. There has also been enlargment of the area in sugar beets for the sugar industry.

Many of the farm buildings and surroundings had the appearance of being kept by people who appreciated beauty in the surroundings of their homes. One was struck by the kind of pictures seen on the walls of even a Husmand's (cottar's) house. There were plenty of good photographs of spots of beauty, inexpensive copies of pictures by great masters, and no tawdry display of gaudy chromos.

The roads were generally well made and in good order for ordinary traffic.

None of the farms, in appearance of crops or general environment, were equal to the best farms in England or Scotland. They could not be considered superior to some of the best farms in Canada. What struck one most impressively was the high level of farming on small and large holdings alike. The Danish farmer, because an intelligent man, is also a thrifty and economical manager. He can get along, make improvements and save money on a much smaller area than satisfies the Canadian farmer.

Sizes of Farms and Holdings.

The sizes of the farms reveal conditions essentially different from those which prevail in Canada. A return published in 1907 puts the total number of Danish rural properties at 250,083. Of these about 70,000 were holdings of under one and a third acres each. The following table enumerates all the other holdings, viz., those having over one and a third acres:—

No. of Holdings.	Size in Acres.	Total Area in Acres.
46,614*	1⅓— 7⅕	179,604
16,988	7⅕— 11¼	159,832
28,992	11¼— 22½	473,598
17,723	22½— 33¾	496,962
35,257	33¾— 67½	1,752,121
25,615	67½—135	2,346,295
6,502	135 —270	1,169,484
1,570	270 —540	574,946
822	540 & over	964,327

*Some of these may have less than 1⅓ acres each.

From the above table it will be seen (putting statements in round figures) that about 2,400 holdings, of over 270 acres each constitute about one and a half per cent of the total number of holdings, and comprise fifteen per cent of the total area.

Holdings.	Percentage of total Holdings.	Size in Acres.	Percentage of total Area.
2,400	1½%	over 270	15%
6,500	3½%	135 —270	14%
171,100	95 %	1⅓—135	70%

The group of 171,100 holders may be roughly described as 63,000 with holdings of from $1\frac{1}{3}$ to $11\frac{1}{4}$ acres each; 47,000 holdings from $11\frac{1}{4}$ to $33\frac{3}{4}$; 61,000 holdings from $33\frac{3}{4}$ to 135 acres. This ratio of working-owners to acres of land indicates the necessity for intensive farming; and taken in conjunction with rural education, co-operation and organization, accounts for the great increase in the number of cows, pigs and poultry maintained, and the enormous increase in the volume of the exports of butter, bacon and eggs.

Frugality, Co-operation, Education.

The country is one, in the main, of peasants and small farmers. They had the appearance and bearing of intelligent, well-dressed and self-respecting people. The farms, almost without exception, showed every outward sign of frugal prosperity. The farmers seemed satisfied with their lot, their progress and the outlook for the future. Notwithstanding a moderate stream of emigration (8,890 in 1910), there has been a steady and considerable increase in the rural population. The numbers of the rural population, in round figures, are given as follows:—In 1880, 1,400,000; in 1900, 1,500,000; in 1910, 1,700,000.

Various observers and students of agricultural situations, with whom the question was discussed in Denmark and elsewhere, attribute the country's marvellous progress to different causes, or lay emphasis upon one or other of different factors. It is admitted and asserted by many that Denmark owes its prosperity in large measure to the co-operative movements. Others, perhaps exercising greater insight, attribute the progress of the co-operation movement itself, and the concurrent advance in agriculture, to the character of the Danish people, which made co-operation practicable and made them desirous of joining in it.

Others again, pushing their quest still further, claim that the general education of the people, more particularly that provided through the People's High Schools, made them willing and able to accept and act upon the ideas and suggestions of the leaders, who saw what could be done with the greatest advantage to the whole people. Here the efforts for education and the efforts for

co-operation shade into each other, and both are conditioned by the race qualities of the nation. Moreover, co-operation for production, for preparation for market, for marketing and for buying are in themselves agencies and instruments of education. Participation in such activities quickens the mental aptitudes, and, by rendering the people more self-reliant, makes them more responsive to expert advice and able to make it fruitful in their own affairs.

Intellectual and Social Preparation.

What is noticeable is that the masses of the people on the farms are advancing together; that their leaders come from all ranks, so far as the size of the holdings is concerned; and that whatever has been found to be a good plan or an excellent practice in one locality quickly becomes the knowledge of all the farmers, and is applied with the modifications necessary to suit their conditions. In the co-operative organization the Husmand, with a holding of only a few acres, has one vote; the large farmer, with many times the quantity of produce involved, has one vote and no more. This recognition of the human, rather than only the property interests involved, is worth thinking about.

It is not probable that the Danish people would have been able to follow out the improvement of their agriculture, to organize co-operative creameries, packing factories, etc., and to profit by the inventions of the time had they not for years had the advantages of processes of intellectual improvement. When co-operation became necessary to enable them to hold their own and to capture the British market for butter, bacon and eggs, they were intellectually and socially able to develop it.

The following table indicates something of the rapidity and extent of the change in the agricultural industry during the past 30 years:—

	1881. (Value in round figures)	1910.
Exports of butter	$ 9,200,000	$ 50,500,000
" bacon	2,000,000	34,000,000
" eggs	300,000	7,000,000
Total	$ 11,500,000	$91,500,000

Intelligence and Persistence.

The improvement in the milking cows furnishes another example of the intelligence and persistence with which the people have co-operated to improve their instrumentalities of production. The soil fertility has been increased by better systems of cropping, and the land further enriched by the manure from the immense quantities of grain and other feeding stuffs imported from abroad. At the same time the improvement in the productive capacity of the individua

cow has been much more notable than the growth in the number of animals. The following table sheds considerable light on that situation.

	No. of Milking Cows.	Value of Exported Butter.
1893	1,011,980	$ 18,720,000
1903	1,089,073	40,320,000
1910	1,280,000	50,500,000

The number of milking cows had been increased by less than 16 per cent. and the value of the butter exported had increased by more than 169 per cent. The increase in the value of the exports of butter is not a true measure of the production of milk. However, one of the dairy authorities in Denmark states that better care and better feed, within the last 30 years, increased the annual yield of milk about 3,000 lbs. per cow. That accounts for $30,000,000 a year in butter. Professor Boggild, a great authority in dairy matters, puts forward the statement that the average yield of milk of the Danish cow in 1908 was 6,170 lbs. In the Isle of Fyen, which has some of the best land in the kingdom, 20,000 cows gave an average yield of 8,100 lbs. of milk each in 1910.

Co-operation and its Results.

The co-operative organizations may be grouped into three large general classes:—

(1) Co-operative organizations for production, such as co-operative creameries (begun 1880), co-operative meat packing plants (begun 1887), co-operative societies for the exportation of eggs (begun 1890), co-operative beet-sugar factories.

(2) Co-operative Societies for analysis and constant improvement of the branches of production; co-operative societies for the breeding of live stock; "Control" societies, etc.

(3) Co-operative Societies for the purchase and distribution of things to be used or consumed in connection with the carrying on of the agricultural work and the homes and life of the people. These things may be taken chiefly as feed for animals, fertilizers, and in some cases seeds, machinery and implements. The first of these Societies was established in 1886, but the movement spread generally from the beginning of 1880. The capital for most of these undertakings is raised by borrowing the amount, for which the members of the Society are collectively responsible.

One is warranted in ascribing to general co-operation amongst the farmers results which in turn become causes of other results. These may be put as follows:—

(1) The development of an attitude of mind towards other farmers and other interests in the locality.

(2) The broadening of the outlook by participation, even to a small extent so far as contribution of property is concerned, in building up and improving the local industry or interest.

(3) The education into ability, for social and public affairs, by active participation in the affairs of the co-operative society or association. The

small farmer, in his degree and according to his output, is put on an equal footing with the largest producer and does proportionately well. The natural leader in business matters is developed, discovered and followed. The man whose ability is chiefly in the direction of talking much and talking well finds his place also.

(4) The relief of the small farmer from some risks of marketing by himself, with the waste of time entailed thereby, and the benefit to him through the larger and stronger organization being able to furnish large quantities of produce of a reasonably uniform quality with fair regularity. Through the Co-operative Society or Association his interests, which of themselves would not be financially large, are served as well by trained men as are those of the largest producer.

(5) The freeing of his mind to attend to the producing or production end of the business on his farm.

(6) The putting of the small farmer in a position whereby he is sure to obtain expert advice from some officer or member of the Society or Association or through it from a government officer.

OPINION OF COUNT CARL MOLTKE.

In an address delivered before a "Conference for Education in the South," at Jacksonville, Florida, in 1911, Count Carl Moltke, Minister from Denmark to the United States, presented a view of some of the differences in the results which have followed from education and co-operation among a rural people in Denmark and those consequences which are likely to ensue where "capital rules supreme, with education as a by-product." Count Carl Moltke said:—

By good farming we mean modern, scientific farming. Farming now-a-days demands the application of modern methods as fully as any branch of manufacture; it has no use for the primitive or the unintelligent. Hence a population that is going to make a success of farming is in greater need of education than a manufacturing population, because while the latter can be directed by a few shining lights in the community, the farmer is often isolated and has to depend much more on his own resources than does his industrial brother.

Count Moltke concluded:—

The time when all their (the peasants' or farmers') skill and energy was required—in the 80's—had been preceded by about a century of gradual progress of intellect; it was accelerated by commercial necessity and to a certain degree as a reaction against their natural isolation in rural seclusion from other classes of the people. The prosperity of the country, the magnitude of its trade, its influence on the economic life of the nation in other branches, such as manufactures, is all the making of these modest people without initial capital. How different is such a process from that which results from huge, foreign investments, eager to reap enormous dividends from the labour of a nation economically not fully developed and which may be rushed into semi-civilization by the alluring requirements of powerful undertakings. But, whatever material prosperity may be the outcome of such conditions, it carries no guarantee of harmony, of respect for law and order, and of mutual consideration in the communities which participate therein. The fundamental difference between the two systems is that in the former capital was made a secondary force, sustaining the never-ceasing, unselfish efforts of the pillars of society—the teachers of the people; whereas in the second instance capital rules supreme, with education as a by-product that may fail altogether.

Without high-minded, self-denying men, who teach for the love of their science, love of their country, you have no means of setting a standard for communities, of making them law-abiding, good citizens as well as able tillers of the soil. Therefore, before anything, get good teachers first. Make the instruction attractive to the young men and women on a sound, moral basis, and keep them alive to the responsibilities they assume towards faithful stewardship of what may sooner or later be entrusted to them. In this way, you will have farmers who love their homes, their soil, and their country, and who will form the very element of true conservatism, without which every democracy is bound to decay.

CHAPTER XXVIII: OUTLINE OF THE EDUCATIONAL SYSTEM.

SECTION 1: DANISH NATIONAL SCHOOLS.

The foundation of the National School of Denmark was laid in the Law of July 29, 1814, the provisions of which are still largely in force. The Law defined the administration of the National School. Compulsory school attendance and a system of fines for neglect and truancy were then introduced; regulations were made for the arrangements of studies, for examinations, interior arrangement of school houses and teachers' dwellings, and appointment and remuneration of teachers. Instructions for School Boards and teachers were also included.

The next important legislation was the Law of March 8, 1856, which established the School Funds and contained regulations regarding number of pupils in school, school houses, remuneration of teachers, vacancies, superannuations and Widows' Funds.

In 1867 and 1868 the local administration of Public School matters was organized by dividing the administrative functions between the Municipal Council and the School Board.

During late years, new laws had been passed determining the limits of compulsory school attendance, the plan and scope of studies, appointment and remuneration of teachers, vacancies and superannuation, formation of Teachers' Councils, and school grants.

THE ADMINISTRATION OF THE PUBLIC SCHOOL.

The National School of Denmark (Folkeskolen) is a State-aided municipal institution. Large appropriations are made in each year's budget towards the payment of teachers' salaries and pensions, interest on school debentures, and school purposes generally in needy municipalities. The total appropriation for public school purposes for the fiscal year 1912–13—exclusive of the grants for Normal Schools (Seminarien) and for the training of teachers—amounts to nearly $1,620,000.

Public School matters are administered by the Department of Ecclesiastical Affairs and Public Instruction according to the laws, rules and regulations made in that behalf. The Department, with its legally trained staff, is assisted in the administration of school matters by educationists, and by branch specialists in music, drawing, manual training and physical drill.

Each of the country's "Deaneries" or divisions of diocese, about 80 in number, has in the District Board a supervising authority, consisting of the Chairman of the County Council, the "Amtmand," or principal civil officer of the County appointed by the Government; the Dean, and a third elective

member. This Board has the general supervision of public instruction within the Deanery, and reports annually to the Department on the condition of the schools. In several matters this Board has the power of final decision.

Municipal Council's Management.

The management of school matters in the individual municipalities is vested in the Municipal Councils; in urban districts, in City or Town Councils; and in rural districts, in the Parish Councils. In both cases the Council works in conjunction with the local School Board. The financial matters of the school are managed by the Council, while the supervision of the teachers and their work is vested in the School Board, consisting of the Incumbent of the Parish as chairman, with several associate members elected by the Council to serve 4 years. The School Board is the immediate superior of the teacher; sees that all children of school age attend school; conducts examinations in the Public School and suitable tests of pupils of private schools; selects text books, prepares annual reports on school matters within its jurisdiction, etc.

The teachers have a limited voice, in an advisory capacity, in the administration of school matters—in urban municipalities through the local staff, with the principal as chairman; and in rural municipalities the permanently appointed teachers are given an opportunity to make recommendations in respect of matters that may be submitted to them according to law. These may be questions concerning the course of studies in the individual school, the erection of new school buildings, the re-organization of school districts and establishment of new schools in the district, the allotment of scholarships, the distribution of prizes for assiduity, and the acquisition of books for teachers' and children's lending libraries.

A certain authority in the management of the individual school is vested in its Principal, who has the immediate supervision of the work of the school and of its teachers. To him is also committed the care of the school buildings, and the registration of the pupils. He prepares and periodically submits reports touching upon the work of his school.

Compulsory Attendance.

To insure lawful school attendance, a register is kept in each municipality of all children who have reached school age. A fine is imposed on parents who neglect to promptly report change of residence of such children to or from the school district.

In order to prevent neglect in school attendance, the laws provide certain remedies as against the parents. Those who permit their children to neglect school without lawful cause are fined 3c., 6½c., 13c. and 26c. respectively, for each day during the first, second, third, fourth and succeeding months within any one term. For non-attendance beyond four days in any month an additional fine of 6c. is imposed for each day of non-attendance during the month, though the fine is not to exceed 25c. per day. In default of payment the fines may be enforced by execution and imprisonment.

The fundamental plan of school management in each municipality is drawn up by the local school authorities, subject to the approval of the Department. This plan includes regulations governing the number of schools, the limits of the school districts, the number of teachers and their salaries.

Details as to Public School instruction in the individual municipality are contained in its Course of Studies, which is also planned by the local authorities, subject to the approval of the District Board. The Course of Studies provides among other things for the subjects to be taught to the individual classes or grades of pupils, the standard to be reached in the several subjects by each class or grade, vacations and school holidays, etc.

The Teaching Staff in the Public Schools.

The Seminaries (Normal Schools) provide for training of teachers, four being State Schools, the 16 others being private seminaries subject to State supervision but entitled to conduct examinations of their own students. The Seminary Course covers three years. The annual tuition fee is $10·80 in the State Schools, and in the private schools from $40 to $65. The former give free tuition to teachers' sons, and up to one-third of the number of the students may enter on half fees. The State makes an annual appropriation of $32,400 toward Scholarships for needy students at all the schools, distributed in amounts ranging from $27 to $50 annually. Seminary students must have had at least one year's practical training in teaching before entrance. An examination (in two parts) completes the seminary training, and qualifies the candidate for appointment as Public School teacher.

Special seminaries, one State seminary giving free tuition, and four private ones, qualify women as teachers in primary schools. These students are also eligible to receive State Scholarships.

Qualifications and Appointments.

For permanent appointment as teacher in Public Schools, in addition to graduation, principal teachers must be 25 years of age and have had two years' previous practical work in teaching; others, one year either in private schools or as temporary teacher in Public Schools. All teachers must before appointment show freedom from contagious tuberculosis of lungs and larynx. Teachers who do not belong to the National Church are not eligible to permanent appointment in the Public School. All Principals (head-masters) are appointed by the Government, and all other permanent appointments are made by the District Board (in some isolated cases by the Bishop) on the requisition of the municipal council concerned, who submit the names of three applicants, from whom the Board makes the selection. Substitute teachers may be appointed by the local School Board, subject to the approval of the District Board.

Misconduct on the part of a teacher may be punished either through the Public School administration or courts of law.

The hours of teaching are normally 36 per week, and not to exceed 42 when rural school teachers give tuition in special subjects. As a rule, the rural teacher instructs in all subjects, while in cities specialist teachers are generally employed.

In cities and towns the Principal directs the work of his school. The larger cities have several Principals, one of whom is School Inspector. At some points the schools are under supervision of a Superintendent of Education, individual schools having permanently appointed male and female teachers and specialists. Country districts have male head teachers, assistant teachers, female teachers and primary school teachers. In addition to those there are temporarly appointed teachers of Infant, Winter and Branch Schools.

Salaries.

The salaries of teachers are fixed by law. Permanently appointed teachers, male or female, in the towns and cities are paid according to two separate scales. The Department makes the choice between these upon the recommendation of the Council of each municipality, and according to population. The initial lower scale for teachers is $405, and the higher $432. Both increase by 4-year periods during 20 years to $756 and $810 respectively. The initial salary for female teachers is $378 and $405, and the maximum is $513 and $540, according to the scale adopted. Head teachers (principals) receive $810 or $864, according to scale, increasing in 3-year periods during 12 years to $1,053 or $1,134.

The salaries of teachers in country schools are likewise graded, commencing for head and single teachers from $243 to $378 and increasing by $54 every fourth year to $513 and $648 respectively. For assistant and female teachers the salaries commence at $189 to $243 and increase by $40.50 periodically to $459 or $513 for the former and to $405 or $459 for the latter.

The salaries of female primary school teachers commence at $148 to $189 and increase by $27 every third year, up to $256 or $297.

The initial salaries are fixed within the foregoing limits by the Department after consultation with the municipal council, with whose consent salaries may be increased beyond the maximum stated.

Salary increases are made on the basis of "years of service" of the individual teacher, according to rules fixed by law.

The head teacher in country districts receives a special honorarium ($6.75 per class) when there are at least seven classes (grades). The care of school rooms may be assigned to rural teachers by the municipality paying at least $20.25 annually for each class room.

The teachers in country districts receive, in addition to salaries, the use of a dwelling with garden and fuel. Dwellings for Principals must have three rooms with outside conveniences; assistant teachers must have at least one room. If an urban teacher is furnished with a house, its rental value is deducted from his salary.

Retirements and Pensions.

Teachers may be discharged either through the courts of law or by the school authorities. The District Board may retire a permanently appointed teacher who applies for discharge without a pension. In all other cases (retirement with pension, or unwillingly with or without pension) the power of discharge lies with the Department.

Male or female teachers who have had permanent appointment in Public School service for 5 years, after having reached the age of 30 years are entitled to a pension if retired through no fault of theirs at the following rates, calculated on the basis of average salary received during the preceding five years:— $\frac{1}{10}$ up to 2 years service; $\frac{2}{10}$ for 2 to 4 years; $\frac{3}{10}$ for 4 to 7 years; $\frac{4}{10}$ for 7 to 10 years; $\frac{1}{2}$ for 10 to 20 years; one-sixtieth added yearly thereafter up to $\frac{2}{3}$ after 29 years.

Widows of teachers, who have the right of pension, receive at the rate of $\frac{1}{8}$ of their late husband's average annual salary for the last five years of his service. Special financial assistance may be granted to the children of a teacher. Every permanently appointed teacher must provide an annuity for his wife, corresponding to $\frac{1}{8}$ of the amount of his salary at any time. In lieu of an annuity he may take out a life insurance policy for fifteen times the amount, payable to her, or he may deposit bonds the interest of which equals the required annuity.

Expenditure in connection with the National School.

(1) The greater proportion of the State grant to schools is expended in the form of salary increases to the teachers. At present this amounts to $1,080,000. The municipalities pay the initial annual salary of their teachers, and the State pays the periodical increases.

Furthermore, the State pays one half (at present about $216,000) of the annual pension burden, including all lawful pensions and financial assistance to teachers, their widows and children. The other half is provided by the *School Funds*.

The State contributes to the support of school work in specially needy municipalities.

Finally, grants are made towards the payment of interest and repayment of debentures on school buildings erected under the provisions of the law of March 24, 1899. (These loans have not been available since 1911).

Private schools (Free Schools), both in the cities and in the country, receive annually State grants amounting to about $29,700 and $12,150 respectively. Schools preparing pupils for any special examination cannot participate in these grants.

The Evening Schools where the youth receive voluntary instruction from the teachers, often in the class-rooms of the National School, also receive annual grants from the State.

(2) The "School Funds" exercise a special function in contributing towards the cost of the National School. There are 21 of these Funds, one in each county. They are partly the medium through which the Government grants are paid to the schools, and partly independent treasuries with their own revenues and expenditures. Their revenue is raised by local taxation in the county, and a portion of their expenditure consists in grants to pay salaries of substitute teachers for the permanent staff.

The School Funds are administered by a special board in each county, called "The School Council," made up of the members of the County Council and a certain number of men elected by the municipal councils for a stated period, the presiding officer of the County Council usually being chairman.

(3) All expenditure towards the National School which cannot legally be met by the State or the School Fund rests with the municipality. Under this head comes the cost of school buildings (except in cases of special State grants referred to), school equipment and libraries, and initial yearly salaries to teachers (to which the State adds periodical increases).

The municipality contributes also towards the Evening Schools and the private schools (Free Schools). The funds required for these purposes are raised by municipal taxation.

THE INSTRUCTION IN THE PUBLIC SCHOOL.

All normally developed children are, within certain age limits, required to attend school. Compulsory school attendance commences at the beginning of the first school term after a child has reached the age of 7 years, and as a rule concludes at the end of the second term after he has reached the age of 14. The school year is reckoned as from May 1 to April 30th, and the responsibility for the fulfilment of compulsory school attendance rests with a child's parents, guardians or employers.

The requirement of compulsory school attendance is met normally by enrolment in the Public School, where children whose parents have not the means to provide for their education receive gratuitous instruction. In the Public School as a rule the instruction is free to all children in attendance, but according to law private instruction may also be given either in private schools or in the home on condition that children, who a rebeing educated outside of the Public School, submit to examination twice each year, either in the Public School of the district or in the private school. The examination is conducted by the School Board. If such children fail to attend, without lawful cause, or give evidence of having received insufficient instruction, they are required to attend the Public School. Statistical reports may be required of private schools, but beyond that no public control or supervision is imposed. Anyone can establish a private school. The control lies in the examination.

In cities the Public School is conducted on the same lines as in the rural districts, and the maximum number of pupils in a class is 35. In addition to the Public School, practically all cities have boarding schools with advanced

work, yet these have a number of free places sufficient for children of parents in straitened circumstances to secure gratuitous instruction.

The annual school period in the Public School is 246 days (41 weeks), leaving 119 for vacation, holidays and Sundays. For individual classes in cities the school period is 21 hours weekly, exclusive of Physical Drill, Needlework, Drawing, Manual Training, and Household Science. In rural districts each class must have at least 18x41 = 758 hours, exclusive of Physical Drill, Needlework, and Manual Training. The Department may make exceptions in this arrangement.

Subjects and Equipments.

The compulsory subjects common to both urban and rural districts are: Danish (an average of at least 287 hours annually in the several grades), Religion, Writing, Arithmetic, History, Geography, Music, Drawing (urban schools only), Physical drill (not compulsory for girls in rural schools), Needlework (in rural districts when employing female teacher).

Instruction may also be given in Nature study, Hygiene, Manual Training, Domestic Science and Physical Drill for girls; and in the higher grade schools, Mathematics and Modern languages. School baths may also be included in the curriculum, both in urban and rural schools. If no gymnasium is available Physical Drill may be given on drill or play grounds, or in the class-rooms with some of the ordinary furniture for equipment. Each class receives 2 to 3 hours weekly, preferably in half-hour periods daily. Organized games and (in summer) swimming may, in a measure, be adopted as a substitute for instruction in Physical Drill. Each school must have adequate playgrounds, and it is recommended that access should also be had to larger grounds for ball games.

Examinations are held in the Public School once or twice each year. Registration of entrance and leaving are made each spring and autumn. The examination of private school pupils is made by the School Board twice each year.

The equipment, books, etc. used exclusively in the Public School are provided by the municipality; books used by pupils both in school and for home study, and those used in home study exclusively, are provided by parents when financially able; if not, the muncipality may provide them free of charge when thought necessary.

The Department issues lists of text-books recommended for use in the Public School, and the State makes annual grants towards the establishment and maintenance of Public School lending libraries for use of teachers and pupils.

The Department provides regulations for the selection of school sites, also standard plans and specifications for the erection and interior arrangement of school buildings in rural districts. The district physician is consulted in the selection of the sites and in the arrangement of buildings. The Department also furnishes suggestions with regard to plans for gymnasia.

Regulations, approved by the District Board, are made to provide for sanitary conditions and care of the school buildings, also for use of schools and gymnasia for other than public school purposes, such as religious meetings, evening schools, other public meetings, etc.

Rural Schools.

In rural districts each municipality has one school district (generally more), and each district has either (1) one school with one or more grades for children of all ages, or (2) a central school for the older children, with one or more primary schools for the younger. As a rule the Course of Studies is common for children of both sexes.

The number of teachers required at any school is determined according to the school attendance. If the average attendance of children in any class, for two years in succession, has exceeded 37, it must be brought down to that limit. As one teacher can instruct two classes (grades), the maximum number of pupils in a school with a single teacher is 74; in a school with 2 teachers, 148, etc.

Children up to 10 years of age may attend the Primary School, which, as a rule, is divided into two grades—children of 9 to 10 being in the senior grades, and those under that age in the junior.

In a few sparsely populated and poor districts of the country there are still schools with unexamined, temporarily appointed, low-salaried teachers. These are called Branch Schools, Winter Schools (open during the winter term only) and Kindergartens for children up to 9 years of age. The number of pupils in such a school must not exceed 35.

The school attendance is arranged so that each class (grade) receives instruction either for six half-days or for three whole days each week. This arrangement is generally combined in such a way that the pupils of the senior grade attend oftenest in winter and those of the junior grade most frequently in summer.

The Rural High Schools constitute a special class of the private schools. They are boarding schools, and give instruction to young men and women who have already passed through the Public School. They give instruction in popular and higher branches of learning (the People's High Schools), or in special practical branches (Agricultural, Horticultural or "Husmand" schools). State grants are made to such schools as well as to needy pupils.

SCHOOLS FOR ADVANCED INSTRUCTION.

Of schools giving advanced instruction—the so-called "High Public Schools"—some are State, others Municipal, and still others private schools. They may be divided into two classes: (1) the Secondary School, with four yearly grades, for children 11 to 15 years of age, which may include a further class, the High School (Realskole); and (2) the Collegiate (Gymnasiet) with three yearly grades, for youths of 15 to 18 years of age.

The final examination of the Secondary School which admits to the Collegiate is known as the "preliminary examination." The final examination of the Collegiate is called the "student examination" (artium) and admits to the University.

The Department may, upon certain conditions, empower municipal or private schools to conduct examinations with the same effect as do the higher State public schools, provided they comply with the same requirements as to studies and teachers' qualifications.

The right to conduct a Collegiate examination is conditional upon the staff of teachers having passed a State examination in pedagogy and ability to teach. The examinations at the municipal and private Secondary Schools are partly—as regards certain subjects—State controlled. The daily instruction in the advanced schools is placed under the supervision of two educational experts employed by the Department. One of these is in charge of the higher municipal and private schools (Collegiates), and the other of the municipal and private Secondary and High Schools.

Annual State grants are made to the municipal and private Collegiates, as well as to the Secondary and High Schools outside the limits of Copenhagen.

THE NATIONAL SCHOOL IN COPENHAGEN.

There is considerable difference in the Public School administration in Copenhagen and in other municipalities, the former having more self-government than the others in school matters.

The highest school authority here is a Board consisting of the Chief Magistrate (Over President), one of the Mayors, and one of the Deans of the City. Subordinate to this Board is a Superintendent of Education and two Assistant Superintendents. The immediate supervision of the individual schools rests with the local School Boards. Each school has its Principal and Assistant Principal, besides a permanent staff of regular and specialist teachers.

The school Principals receive as yearly salary $1080, increasing to $1404; male teachers receive $432, increasing to $972; female teachers $432, increasing to $702.

There are two principal groups of municipal schools, viz:—Fee Schools and Free Schools, both for children of school age. The former charge the very moderate fee of 27 cents monthly for each pupil, but this is sufficient to secure the maintenance of a more select class of pupils than is the case in the Free Schools. All schools have 7 grades. Instruction is given to each class for one-half of the day, and two classes of children are taught in each class room daily, one in the forenoon and one in the afternoon. A few municipal schools give advanced instruction in secondary grades for children from 11–15 years of age.

SECTION 3: TECHNICAL INSTRUCTION.

Introductory.

Technical Schools were originally begun only as Evening Schools about the middle of last century, so that in all the provincial towns such schools have now been in operation for a long time, and in all the country round new ones are still being established. Though such schools were considered indispensable, their activities for many years remained on a rather primitive level as to financial support and as to method of instruction. However, in exterior conditions these schools have been greatly improved during the last 30 years, chiefly because

of Government aid, constantly increasing, for the erection of appropriate school buildings, maintenance, etc., as shown by the following amounts granted in 1909–10:—

To the Technical School at Copenhagen	$ 24,570
" carrying on of schools in Provincial towns	60,750
" subjects of general instruction	4,050
" training of teachers	10,800
" assistance of pupils	13,500

There are now 145 state-aided Technical Schools in Denmark (excluding Copenhagen), at 91 of which special buildings have been constructed, the Government having contributed one-third of the total building cost, including the price of the land.

During the period from the school year 1889–90 to 1907–08 there has been an increase in the number of pupils from 6,961 to 15,737, and in the hours of instruction from 74,317 to 215,727. In the Technical School of Copenhagen 3,509 pupils were instructed in the year 1907–08.

Due to Private Initiative.

Everywhere the schools are established on private initiative, and are carried on as private schools subventioned by Government. From the beginning the management of the schools was in the hands of the local Mechanics' Associations; but later on, particularly in the cases of the more important ones, it has passed to the so-called Technical Societies, to the boards of which, owing to their financial contributions, one or more members are delegated by the Mechanics' Associations.

The local governing boards, whether Technical Societies or Mechanics' Associations, have in addition to their own contributions received contributions from other local institutions, such as municipal bodies, county treasuries, savings-banks, etc., for carrying on the schools.

Private contributions, including school fees, amounted in the school year 1907–08 to $83,730, (in 1889–90, $26,900); in Copenhagen in 1907–08 the amount was $18,240.

The salaries of the teachers (generally giving lessons by the hour) vary from 14c. to 68c. per hour, 41c. on the average. The teaching staff consists, in a great measure, of teachers employed at public schools, of men expert in technical and artistic science, and of some mechanics.

At the beginning the schools were essentially Evening Schools for mechanics of all kinds, but later on a number of schools, particularly the larger ones, added Day Classes, with instruction specially adapted to builders' workmen, engine-builders and painters. In the Day Schools at Copenhagen, Odense, Aarhus, Randers and Aalborg pupils of the above trades can have the highest technical training for mechanics.

Up to a few years ago only male pupils attended these schools, but now it has become usual for female pupils to attend, the latter being instructed either with the males, or (if their number should be sufficiently large) in separate classes.

Subjects of Instruction.

The instruction, usually carried on during the winter months, from October till April, but in a few schools also in April, May and June, comprises the following subjects:

(1) Further instruction in the general elementary subjects (Danish, Arithmetic and Writing);

(2) Drawing, preparatory and professional (under the latter the painting classes);

(3) A number of mathematical and similar subjects, intended to produce technical improvement;

(4) As to a great number of schools, some commercial instruction;

(5) In a number of schools, instruction in one or two foreign languages;

(6) Of recent years, extended instruction of a cultural kind, particularly by means of lectures on subjects from the history of civilization, fine arts, literature or biography.

Everywhere instruction in general school subjects is carried on almost in conformity to the same instruction in the schools for children. The same applies to the other merely theoretical subjects, for which it has been possible from the very beginning to procure a staff of teachers able, as to the matter of teaching, to give instruction equal to that reached in any other kind of schools through many years' practice in teaching the same subjects.

Instruction in Drawing.

As to the instruction in Drawing the condition upon the whole has been quite different. Though from the beginning this has always been the head section of the Technical Schools, there was no instruction in the proper sense of the word, because of the lack of teachers pedagogically trained and of scientific methods of teaching.

Until about 20 years ago there was a merely mechanical copying of drawings, without any instruction attached thereto, so that while a great number of works of very fine appearance were produced, the personal development which ought to have been gained by the pupils was lacking.

During the last 18 years, however, strenuous efforts have been made to render the Drawing instruction thoroughly scientific, especially through Government instruction courses for Drawing Masters. Though the latter plan has been in operation for many years, only since 1890 has the attendance of teachers at work, as well as of candidates, been increasing. In 1890 the number attending was about 50; in the financial year 1908-1909 about 240 teachers and candidates were admitted to the courses, 129 being bursars and 111 receiving the instruction free.

In the preparatory Drawing instruction particular stress is laid on lectures and examinations, so that Geometrical Drawing and Projection Drawing are becoming, (1) Geometry and, (2) Elementary Descriptive Geometry with Drawing exercises.

In continuation of this plan it is intended gradually to transform the instruction in Professional Drawing so that instead of being a mere production of Drawings from problems already solved, it should consist of professional instruction by means of lectures, together with sketching and examination, and besides this of solving problems rationally placed before the pupils by means of Drawings worked out.

Inspection and Government Grants.

An Inspector appointed by the Ministry of the Interior has superintendence of all the Technical Schools outside of Copenhagen. The same Inspector conducts, on behalf of the "Kultusministerium" (i.e. Ministry of Ecclesiastical Affairs and of Public Instruction) the courses for Drawing Masters above mentioned. As these courses (running from 5 to 12 weeks) are generally attended through 4 or 5 years, the Inspector, besides thus superintending the improvement of Drawing Masters, is enabled to watch and guide the work of these teachers in the schools.

Every year all Technical Schools (outside of Copenaghen) subsidized by Government, as well as new schools desiring to share in the yearly distribution of the Government contribution, forward to the Ministry of the Interior a petition containing a short statement of the school work during the last school-year. The Government contribution is then fixed for each school, in proportion to the numbers of pupils and lessons. A part of the total grant is kept out of the calculation to enable the Ministry to give extraordinary contributions to schools whose conditions may render such desirable. The Technical School at Copenhagen receives a fixed yearly contribution from the Government.

SECTION 4: THE PEOPLE'S HIGH SCHOOLS.

To anyone familiar with the names used to classify schools in other countries and not acquainted with the development of education in Denmark the designation "People's High Schools" is apt to be misleading. They represent a movement and institutions that have been called, by eminent Danes who have intimate knowledge, by such names as "Peasants' High Schools", "High Schools of Yeomanry" (H. F. Feilberg), "Popular High Schools" (Alfred Poulsen), "People's High Schools" (Jacob Appel). These schools are Denmark's original contribution to organization, method and practice in education.

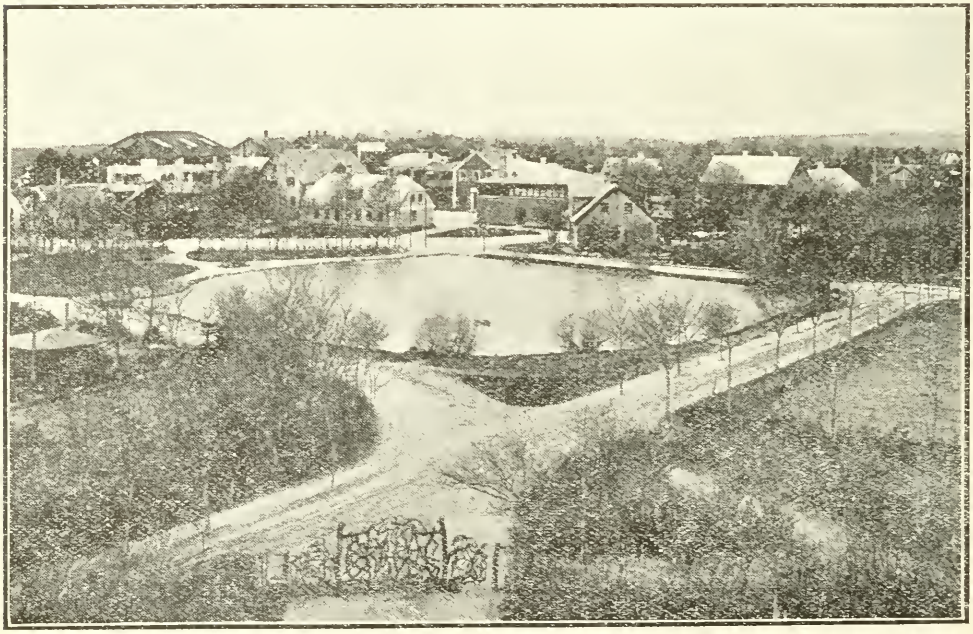
High Aims.

In the large the movement was planned, and the schools are still conducted, for the purpose of, (1) developing a quick sense of responsibility for life, (2) fostering a love of and devotion to Denmark and, (3) cultivating moral, intellectual and practical qualities which enable and move the individual students to do more work for Denmark and to obtain greater satisfactions in life for themselves.

Mr. Jacob Appel, who, when the Commission was in Denmark, was Minister of Church and Education (Kultus Minister), in an address published in 1904, says: "It is an entirely national movement which has caused the development and success of the People's High Schools in this country. I feel convinced that the work of the High Schools has for long strongly influenced the Danish nation and Danish social and intellectual life. Our intention has been and will be in the future to make each single man and women capable of sharing the blessings of social and intellectual life." In the same address he says: "The student of the Danish High School passes no examination, he has no privileges at all. He only goes back again to his work."

In this connection H. F. Feilberg says: "At this revolutionary school, no examination, no certificates, no compulsory attendance at lectures." The movement "was as first looked upon as a fantastic dream of impracticable minds impossible to realize, or, when perhaps realized, producing day-dreamers."

Mr. Alfred Poulsen says: "There must not be advantage gained from frequenting such a school but that which can be neither weighed nor measured, nor on which a pecuniary estimate can be placed. No other profit must be de-



People's High School at Askov.

rived from the instruction than the increase of inner worth which all good learning gives." He quotes in this connection the words of Hughes in "Tom Brown's School Days." When asked: "Why do you send your son to school?" he answers: "If he only can become an honest, useful, truthloving Englishman and a gentleman and a Christian—that is all I wish for." Mr. Poulsen adds: "The man who has said those words, thoroughly understands the aim and object of our Danish High School."

In an address delivered in 1901, Mr. L. B. LaCour, himself one of the foremost leaders, said:

> But what object do the schools pursue? The schools are working towards the three great aims of the Danish people during the present age—(1) to foster love of the country and national feeling; (2) to educate the people to make proper use of the free constitution which we obtained peacefully in the year 1849; and (3) to prepare the young so as to give them a better chance in the fight for existence as it is now raging in all trades and not the least in agriculture. To solve this problem it is first of all necessary to develop the personal character, to make of the young true men and women, and this is chiefly and best done by means of free lectures, giving instructive and interesting examples of the history and by a more intimate knowledge of the best of the literature of the nation. As Bishop Grundtvig (the original founder) says in one of his best songs, "It is the best possession of man to know God and himself. Make every man a servant of God and a master of his task." In those few words are contained the double object of school work, namely, universal and professional education.

They were not established to lead straight to better pay, more profits, or better positions as such. They pointed to nothing so definitely as to the hope held out to young men and women of entering upon the joy of life with enthusiasm inspired by the glory of a historical past, by the power of language spoken and sung, by the inspiring uplift of literature, by the beauty in nature and by the dignity and meaning of human life.

The Susceptible and Accessible Age.

Young men who attend in winter and young women in summer are admitted not before 18 years of age and seldom after 25. Mr. Alfred Poulsen says: "They are all schools for grown-up people. Grundtvig (who conceived the plan) held to the opinion which experience has shown to be right that it is at the age of 18 to 25 that the intellectual faculties are most accessible to intellectual influence. Before that age the mind is not sufficiently developed, and meditation cannot be awakened. Later on, in more advanced age, most minds will be occupied with the practical duties of life, but the age of strong emotional feelings and arduous longings, 'the sturm-und-drang' period natural to youth, is the best time for sowing the seed of knowledge and for exercising the personal influence of the teacher. For on the latter all depends."

Feilberg says: "In youth the eyes commonly are wide awake. All the gates of the intellectual and emotional nature of man are opened. Youth is the sowing time for the harvest to come. The deep impressions received in youth will stamp a man's mind and will do so for life."

Evolution and Growth.

From time to time there has been a tendency towards and then away from including industrial and agricultural education within the High Schools them-

selves. At first, subjects appropriate for practical education were taken up at some of them. At a later stage a few schools developed two branches which were both kept up at the same institution, namely:

(1) High School with liberal education.

(2) High School with vocational education for farmers, joiners, carpenters, builders, fishermen.

In such a school all the pupils met together daily to take some lectures together. They all lived together. That gave a unity to the life of the school. A few of this type still continue. Then the third stage, in which the schools are just now, presents this situation: about 50 People's High Schools proper; about 30 People's High Schools with a vocational (that is, agricultural, housekeeping or technical) side; about 20 Agricultural Schools; and about 13 Housekeeping Schools.

In Denmark it is generally held desirable that young grown-up people, who are to be occupied in agriculture and housekeeping, should begin their later education with a High School course before attending one of the vocational schools. As a matter of fact the majority of the Principals of the Agricultural Schools have themselves been pupils of some High School.

At the beginning of the movement instruction was provided only for young men. Afterwards a course for young women was provided during three months of the summer. A still later development was made in providing through one Extension High School, at Askov, for advanced courses for the further education of some who might become teachers or principals in the High Schools and others. In this course the men and women attend together through the winter months.

At Askov there is also a special course annually for 20 young teachers connected with People's High Schools. The course is one in general subjects (sciences, mathematics, etc.) and continues three months; it is usually taken by a teacher in each of two or three years.

The Development of other Schools.

The People's High School, as a school for liberal education only, has had a very close connection with the progress of agriculture and the development of technical education. Mr. Alfred Poulsen says: "The Agricultural or Technical Schools or Colleges are closely related to the High Schools. The persons who superintend them are on a friendly footing with the High Schools, and their whole plan is laid out upon the same principles. They work hand in hand with them, receiving not only the majority, but as they say themselves, their best pupils from the High Schools."

It is estimated that about one-half the students at Agricultural Schools have first been pupils at the People's High Schools. On the whole the feeling seems to be rather general against putting "practical," "much scientific," or "agricultural," instruction into those People's High Schools which are not distinctively vocational.

The Schools Transformed the Nation.

From 1870 to 1880 agriculture in Denmark underwent a great change. The system of farming, based chiefly on the growing and selling of grain, was failing. The exportation of grain was the chief channel through which the surplus products of agriculture brought revenue to the country. Under the leadership of wise and patriotic men the attention of the rural population was directed to the development of dairy husbandry and more particularly to the production of butter. That was well begun by 1880. It then became evident that if the Danish butter was to obtain a good place and a good price in the English market it must be produced of a better, more uniform and dependable quality. Further, it would be necessary to provide greater quantities, and that continuously throughout the year, in order to maintain a hold upon markets which had been acquired.

Mr. Alfred Poulsen states:

> Then arose as by magic the large co-operative dairies, which get their milk from larger districts, ordinarily from a whole parish. By this mode of proceeding it was rendered possible for our butter to gain its good reputation in the English market. The quickness and precision with which this change was carried out, is due partly to the leading agriculturists of our country and partly to the High Schools. By their help a set of young, energetic men were brought up to understand the importance of the new ideas; and to secure the success of the new principle of co-operative manufacture, some of them, after a very short course of instruction, were able to undertake the responsible work as managers of the larger and smaller co-operative dairies. * * * * * The greater part of the men and women who manufacture this butter are pupils of the High Schools. I might, if time allowed it, quote many sayings of men, who in different branches of industry have made themselves prominent. They all agree in this, that the young people who have frequented the High Schools are much more to be relied upon, more industrious than their comrades who never had the opportunity of attending them. To be brief, I shall content myself with stating a remark recently made at the Congress of Antwerp by Mr. Peschke Koedt, one of our most influential merchants. He said: "The Popular High School is one of the most prominent factors in the economic life of the country."

"Highly Developed Common Sense."

It is not claimed in Denmark by the most ardent friends of the People's High Schools that an education along the lines of national hero-worship, with poetry and other elements of patriotic delight, must necessarily advance towards good agriculture, good butter-making and good cattle-raising. The belief is that these schools were thoroughly attractive to the peasants and developed the habit of taking in and considering knowledge.

It is common knowledge in Denmark and wherever the methods of Danish agriculture and agricultural commerce are known that (1) in grain and root crops, and live stock and products from live stock, the yields have been increased; (2) qualities have been improved; (3) cost of production has been lessened; and (4) better prices have been obtained. Mr. T. P. Gill of Ireland says the authorities in Denmark generally rely more upon the "highly developed common sense of the Danish farming class as brought out by their High School education, and their system of organization for the spread of improved methods of farming, than they do upon any special technical training in the schools. The intelligence of the Danish farmers is so sharpened and broadened, and they have at hand so efficient an instrument in their system of organization, that they are capable of

appreciating at once the results of investigations as they come from the universities and laboratories, and are in a position to apply the knowledge thus received. At the same time the greatest care is taken that there shall be no lack of special technical education."

Sir John Gorst, at one time President of the Board of Education of England, has mentioned that the education imparted to the rural population by the People's High Schools and the Agricultural Schools is an essential reason why Denmark has risen from being one of the poorest of European countries to be one of the richest.

Peasantry Enlightened, Wealth Diffused.

Bjornson's saying is often quoted: "Denmark has the most enlightened peasantry in the world." Perhaps nowhere else does one find the people in general better educated. With education as with wealth, there is a general diffusion which brings the average to a high level without leaving large numbers unhelped. In Great Britain, for example—to which (according to Mulhall) Denmark stands second in average of wealth per head of population— there are a few very rich people, a majority of people of moderate means, and a lamentably large number continually approaching a state of economic distress. On the other hand, in Denmark the well-being is generally diffused. The average wealth of two persons, one of whom owns one million dollars and the other one hundred dollars, cannot be regarded as $500,050 by any stretch of the imagination by the man who owns only the one hundred dollars.

How the High Schools Originated.

At this point it is appropriate to narrate briefly the origin and development of these schools. It appears that the idea of them and the first steps towards carrying the idea into effect were due to Bishop Grundtvig (1783-1872) a famous Danish poet and historian. "If great genius for one thing is known by its power of uniting and combining together, then Grundtvig undoubtedly is our greatest man. He is in a word the national hero of ours." (Poulsen). He was characterized and moved by human sympathy to work for his fellow man. This feeling showed its influence especially in his love for the uncultured, unartificial man. Like Carlyle, he venerated the common sense of the farmer and the horny hand of the labourer.

In a letter written in 1841 to King Christian VIII, Grundtvig developed part of his idea, saying that,—

> Among the teachers of the High School there ought to be at least one who was "a master of the mother tongue, not only as it is found in books, but as it lives in the nation; at least one who knew and loved our fatherland's history and was able to picture it vividly in words; at least one who knew and loved our national songs in their old form, as well as in the new, and was able to lead the choir himself or have an assistant to do it; at least one who had seen much of our fatherland and knew the nation, the trades and the resources; and, finally, one learned in the law was to be desired, one who could give the youth a true and living apprehension of our fatherland's constitution and laws, formerly and now."

After him came Kristen Kold. The following is what Mr. Ludvig Schroder, of Askov, stated regarding the precise nature of Kristen Kold's contribution to the success of the High School movement:—

> Kristen Kold contributed more than anyone else to prepare the way for the influences of the High School in the large broad strata of the population. He also set the example of making the life at school as home-like as possible for the young people who were brought together there. Finally, it is he who, having engaged women teachers in his school, began to collect young women as pupils in the summer, while the winter was given up to the young men. Grundtvig sketched the plan, but Kold laid the foundation securely and well by showing that the schools must first try to enliven the youth, and after that to enlighten them.

The Schools Developed the People.

The first school was founded in 1845, four years before the era of the present constitutional government; but the movement took a new sweep and pace after the disastrous war with Prussia, and the loss of a large part of territory, in 1864. The work of the first leaders has since been carried forward, amplified and evidently improved, by bands of noble men and women, chiefly of peasant or small yeoman origin, who have inherited the vision of the great leaders and have maintained their enthusiasm joined with faith in a great future for Denmark and an abiding faith in the providence and wisdom of God.

The development of Denmark gave a peculiarly appropriate setting for the work which these schools have undertaken and done so well. Rather less than a century and a quarter ago the Danes were serfs. The boon of self-government was gained in 1849 without bloodshed. Their history from the beginning of the century had been one of severe national disasters and partial recoveries. When the climax to the impairment of their size and power came with the loss of the southern provinces, after the war with Germany in 1864, the people were disheartened to such an extent that their leaders feared they might wholly lose faith in the future. Resolution to avert the threatened evil and remedy the condition was the impelling motive of those in sympathy with the aspirations of Grundtvig.

The People Developed the Schools.

Under the leadership of the men who have been chiefly responsible for the People's High Schools, private initiative has played an ample part in the progress of the country. An outstanding characteristic of the Danes from the time of the old Vikings has been a spirit of selfreliant independence. Since they gained self-government they have been characterized by the keenness with which they seek after knowledge. The nation, through the personality of its people, gives one the impression that it hungers and thirsts after intelligence. Out of such conditions and material the educational and co-operative movements have grown. Each of them has had its part in making Denmark intelligent, capable and rich. One does not find supine contentment. Perhaps that might be to such a people a weed rather than an enriching crop.

Before the war of 1864 there were only 20 High Schools in Denmark, but in the few years, 1865-70, 50 new People's High Schools had entered upon their work.

At the present time there are about 50 People's High Schools proper, about 30 with an Agricultural side, about 20 Agricultural Schools, and 13 Housekeeping Schools, all similar in plan of organization and maintenance. The first two kinds are attended by about 7,000 pupils annually, in about equal numbers of young men and young women, and the third kind by about 2,000 students. The 5 largest People's High Schools were attended in 1906 by more than one quarter of the whole number, whereas the 38 smallest ones had not more than another quarter.

The Agricultural High Schools grew out of the People's High School movement first as a branch on the parent stem, and afterwards as separate institutions, following similar methods but having agriculture and the related sciences as the main portion of the subject matter. The Agricultural Schools are located generally in the neighbourhood of a People's High School. In some cases teachers lecture in both schools.

At the People's High School the course for men occupies only five or six months of one winter, and the course for young women only three months of one summer. The courses at the Agricultural Schools occupy about the same time. Allowing for those who attend an Agricultural School after attending a People's High School and those who attend twice, about one person in every five who annually come to the age of 18 years in the rural population attends a People's High School (liberal, agricultural or housekeeping). The proportion has been steadily increasing. After the young people go through the comparatively short course, as a rule they return to their homes and to farming work. It is estimated that there are at the present time in Denmark nearly 150,000 men and women who have attended these High Schools. Mr. Thornton says that when the Parliament assembled in 1901 it was found that 30 per cent of the members of the Upper and Lower Houses had been High School pupils.

The High School pupils exert a marked influence on the social and intellectual life of the people by the spirit of comradeship and friendship which is maintained after their attendance at the High School ceases. Scattered throughout Denmark in 30 or 40 different towns, "High School Homes" have been established and maintained. These are in the nature of simple hotels, with plain living accommodation, a few rooms for meetings, useful libraries, etc. When ex-students of High Schools have occasion to visit the towns they make these High School Homes their headquarters.

Courses of Study or Work.

History takes the most important place among the subjects, and particular stress or emphasis is laid upon Danish (the mother-tongue), and Literature. A good many lectures are given on Geography, Physics, Anatomy and Hygiene. Some time is devoted to Arithmetic, Drawing, and in some cases Surveying.

Physical Culture is regarded highly, and receives much attention. The schools maintain that rational bodily exercise is of the utmost importance for the health and vigour of the body, for the capacity to do mental work, and for

the strengthening of moral qualities. The regular daily gymnastics are considered of not less importance for students who come from hard bodily exercise than for those engaged in sedentary occupations.

Singing is more than a subject, a course, or an art; it becomes an atmosphere, a feeling and interest, which embraces all others. It is inseparable from High School teaching. The pupils sing one or two songs before the commencement of every lecture, and very often afterwards. When it is remembered that there are three to five lectures a day besides the other educational work, it becomes evident that the remarkably rich collection of historical, national and vernacular songs and hymns which the Danes possess is put to a generous use.

In brief, the work at the school, as gathered from observation by the Commission and discussion with the teachers and others, is characterized chiefly by the attention given (1) to History, the Mother-tongue, and Literature; (2) to Physical Culture and Singing; and (3) to other subjects, including some sciences and practical work. Many of the teachers and others are opposed to the extension of practical work in the High Schools proper.

The Spirit and Method.

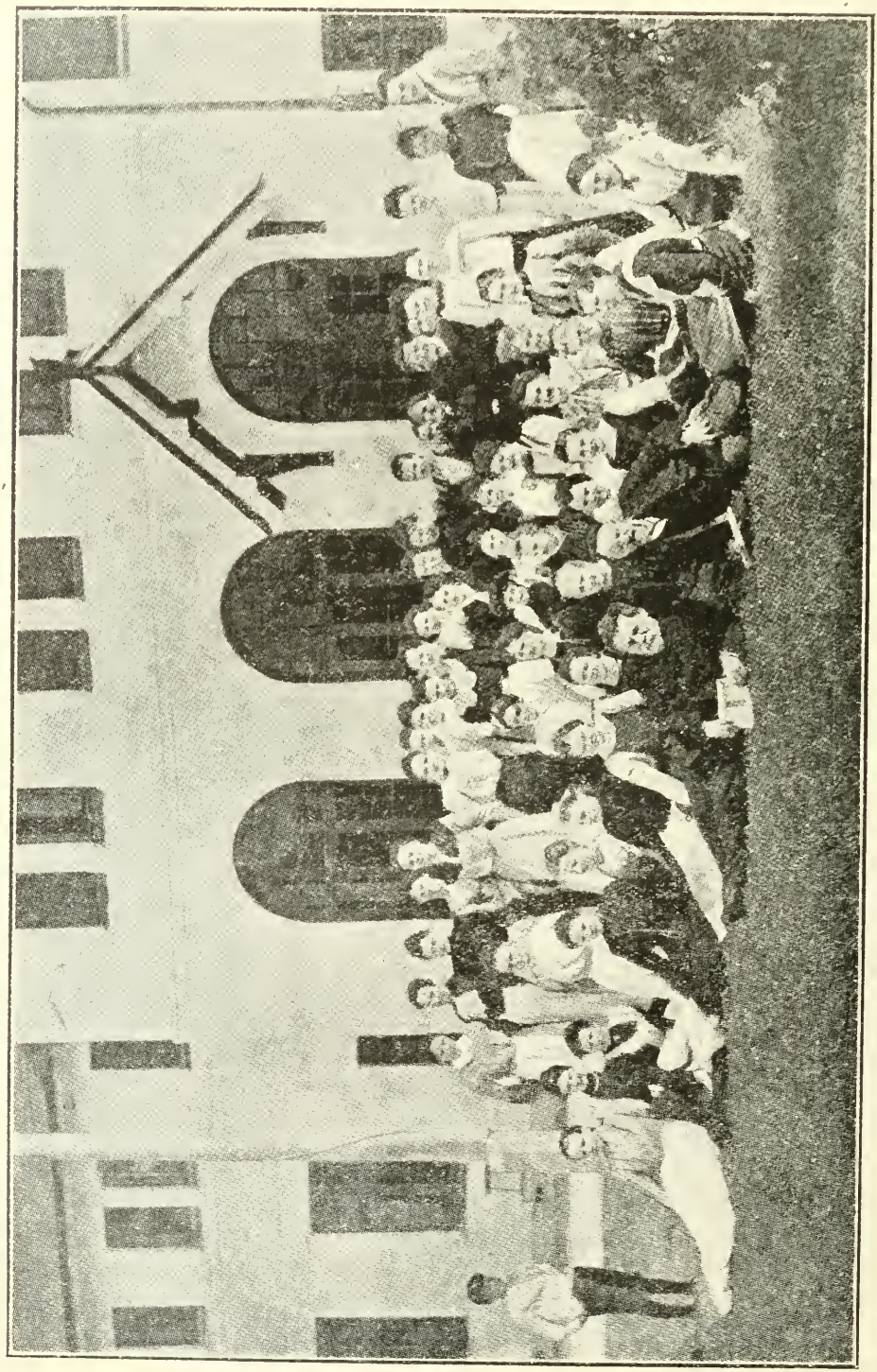
The Danish teachers state that no one is able to judge of the course by an inspection of the time-table and the different subjects mentioned on it. The claim is made that the importance and emphasis should be laid upon *how* information is imparted and education given, and upon *who* it is that gives it, rather than upon *what* is the subject matter. "The mark to be aimed at is not to learn this or that, much or little, but to be made prepared for the teaching of life." The wife of the Principal, in her relation to and influence upon the students, is one of the powerful factors.

The lecture method is the one chiefly employed. Books play a very subordinate part in the work of the school, although pupils acquire a love for reading and ability to use books which influence and enable them to go further after they have left school. In the teaching of History a great deal is made of the characters of the men and women who stand out as having originated, shaped or directed the conspicuous movements in national or world affairs in the past. In all the High Schools one sees portraits or busts of the great men and women of Denmark who are renowned for services rendered to the nation. Some leaders now want to modify the course in History by including British and American history and economics, as these have come to play such an important part in the life and outlook of the Danish nation at the present time.

In 1910 Holger Begtrup, who is regarded as one of the ablest High School men in Denmark, said: "It is the special business of the High School to show with clear emphasis how we, through union with England and America, are helped in our journey to that higher human development our race is striving after."

Attention at Lectures.

The use of notebooks by the students while the teacher is lecturing is discouraged. The object is to have the pupils come under the sway of the lec-



SUMMER STUDENTS OF THE PEOPLE'S HIGH SCHOOL, LYNGBY.

turer, in order to be impressed by the main ideas of his discourse, rather than to have them retain a distinct and clear recollection of the data or facts which he may have stated. "On that very point where the ability of the teacher meets the wants of the pupils, there exactly lies the task of the school."

Experience does not show that every lecturer can hold the attention of all or even of a majority of the pupils on all subjects when no notetaking is encouraged and no examination is expected. One member of the Commission in observing a large class of women, during a lecture on a science subject, estimated that not more than one-third of the class were paying reasonable attention to the subject of the discourse.

Social Qualities Developed.

The students dine together. In the dining rooms visited the appointments were of the simplest sort. In some of them table-cloths were used, in others there was a table-cloth only at the table of the Principal, with oilcloth covers on the others. The seats were long benches without backs. The good-fellowship which prevailed was in itself an evidence and means of further education. At the close of the meal one heard everywhere the salutation, offered by neighbour to neighbour and promiscuously as the room was being left, "Velbekomme" (May it do you good). On all hands there was plenty of good humour and evidence of genial comradeship among the students and between the students and teachers.

The features that stand out boldly as the results of the school are the awakened interest in the meaning of history and literature, the culture and friendships which come from living and studying together for a period of three or five months as the case may be, and the subtle, strong and evidently enduring influence of singing historical, national and patriotic songs and hymns together.

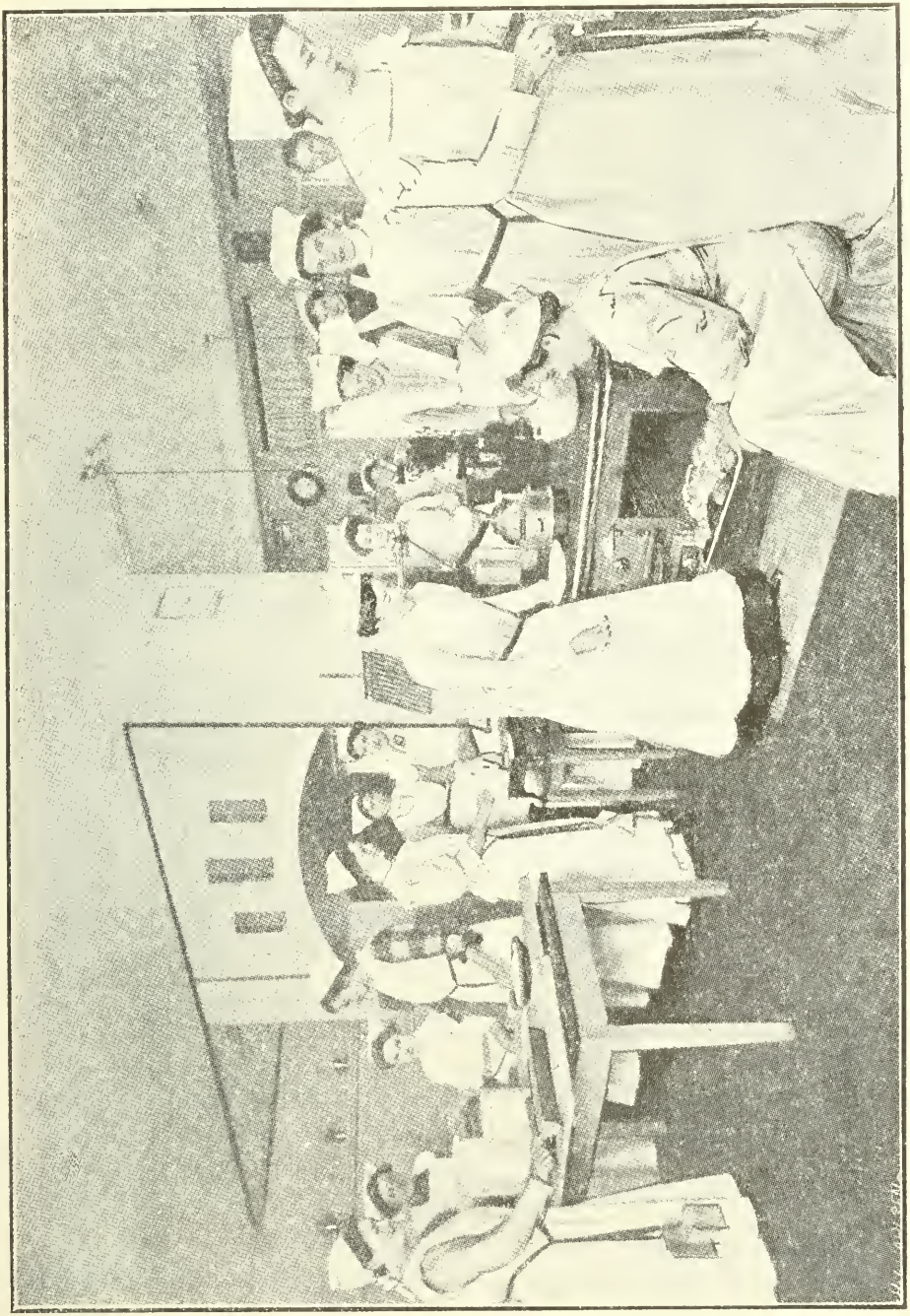
How the Schools are Financed.

The People's High School is really a private institution receiving some assistance from the State. They were all founded by private means and, with some exceptions, are owned by the Principal of the school. In a few instances hundreds of the peasants (small landed proprietors), feeling the need of the school, voluntarily subscribed towards the cost of its establishment. To entitle the school to receive a grant from the State it must have been attended by at least 10 pupils for two years, and conducted in a satisfactory manner. The means whereby the latter fact is established was not made clear.

Besides the amounts which are provided by the State as Scholarships for the poorer students, grants-in-aid or subsidies are paid by the State to the Principals and owners of the Schools in the following way: A grant of 500 Kroner* is given every year to each school; 10 Kroner is paid to the Principal every year for each student in attendance. Besides there is a grant calculated upon the expenses of the school, so far as salaries, books, apparatus and interest

*A Kroner may be taken as the equivalent of 27 cents.

SEWING CLASS AT HASLEY.



HOUSEKEEPING SCHOOL—HASLEV.

upon investment are concerned; but no High School proper can receive more than 3,000 Kroner a year.

It is not likely that these High Schools could have succeeded but for their inexpensive character. They are organized, appointed and equipped in the very simplest way. They are residential schools where the pupils all live together. Each student brings to the school the bedding required and some other small articles necessary. The total fees will average about 30 Kroner (about $8) per month, including board and residence. The total outlay of the student, including expense of travel, books, etc., would be between $50 and $65 for the five months course. The fees vary somewhat and are slightly higher (47 to 27 Kroner per month) at some Agricultural Schools.

Many Scholarships are Provided.

The State co-operating with County Councils provides a sum to be expended yearly in Scholarships for the poorer students. These Scholarships are distributed among the Counties on the basis of the number of students of the previous year. Each subsidised pupil may receive a Scholarship up to 20 Kroner per month of attendance.

In order to obtain a Scholarship a candidate must fill up a schedule in which he makes a statement as to his means (which the parish council must attest), showing whether he or she has had a Scholarship before, and giving particulars of the expenses at the High School he or she proposes to attend. If he wishes to go to an Agricultural School, he must give evidence that his general education is sufficient to allow him to follow the instruction. Where there are more candidates than Scholarships the County Council may give preference to the older candidates. Of all the pupils in attendance at the High Schools, Agricultural Schools and Housekeeping Schools, probably one-half receive Scholarships. No difference is discernible, if it ever exists beyond the inner consciousness of the persons who have received the Scholarships, between those who attend with that help and those who come on their own or their parents' or guardians' resources. Application for or acceptance of a Scholarhip is not regarded as anything to be ashamed of. As one Dane has said: "Misfortune lies in poverty only when accompanied by ignorance, immorality and impiety." In the case of the subsidised students, the Scholarship will, as a rule, pay about one-half of the total cost.

The reported attendance of young women at four High Schools proper visited was: Askov, 125; Haslev, 150; Ryslinge, 206; Vallekilde, 275.

In the case of an inquiry in 1907, 17 per cent of the pupils had formerly attended a High School; in most cases the student who takes a second course attends a different High School from the first one attended. There is no second year course, as such, following the first year course, with the exception of the course at the Extension or Advanced School, at Askov. There are special courses in several of the Schools, as for example at Ryslinge for Teachers of Physical Culture, 5 months for men in winter and 3 months for women in summer.

The Uplift of Rural Life.

The People's High Schools have become the centres of wide and far reaching influence outside the immediate education in their own courses. In close proximity to most of the largest High Schools proper there are an Agricultural School and a Housekeeping School. The People's High School, at Askov, may be taken as representing the largest development in this respect. Close by it is a Weaving School for girls; and a Sloyd (or Swedish Manual Training) school for teachers. Then there is an Agricultural Demonstration Station just a stone's throw distant; in the vicinity an Agricultural School; and at a distance of two or three miles a School for Housekeeping Occupations.

One feature which must not be overlooked is the influence on the solidarity of feeling in the nation as a whole through students coming from one district to attend the People's High School located in another district. That is quite general.

The Chairman of the Commission travelled a good deal in Denmark, visited farms and conversed with farmers of different types from the husmand, farming three acres, up to the President of one of the Farmers' Associations who farmed three thousand acres of his own property. Typical of the attitude of the others towards the People's High Schools were Mr. and Mrs. Neilson on a 70 acre farm near Odense. They had both been students of a People's High School. The home and its surroundings gave every evidence of comfort, intelligence and refinement. The farm had the appearance of being managed by a working farmer who had adequate practical knowledge and ability. When Mrs. Neilson was asked whether she regarded her course at the People's High School as having been of value to her, she answered: "Yes, certainly yes, it gave a meaning to life for me." Her husband said the same thing in other words. When asked further as to what particular subjects, or part of the course, they now recognized as having been most beneficial to them, they agreed in putting History, Physical Culture and Singing among those which they regarded most highly. They were representative of many others whose intelligence, gentleness, vigorous ability and most courteous good-will are helping to make the nation prosperous and happy.

THE PEOPLE'S HIGH SCHOOL AT RYSLINGE.

Mr. and Mrs. Alfred Poulsen's school may be taken as typical of the best and largest of the High Schools proper. The ground covered is indicated, and only indicated, by the subjects and the time devoted to each.

WINTER COURSE FOR YOUNG MEN (5 months.)

Subjects.	*Time.*
Danish and Composition	6 hours weekly.
Danish History	6 " "
Universal History	6 " "
Social Science	1 " "
Danish Literature	2 " "
Arithmetic	3 " "

Geography	3 hours	weekly.
Nature Science	4 "	"
Drawing and Surveying	2 "	"
Agricultural Conditions	1 "	"
Physical Culture	6 "	"
Writing	about 24 "	in all.
Book-Keeping	about 24 "	in all.
Reading and Singing	in the evenings.	

SUMMER COURSE FOR YOUNG WOMEN (3 months.)

Subjects.	*Time.*
Danish and Composition	6 hours weekly.
Danish History	6 " "
Universal History	6 " "
Danish Literature	2 " "
Arithmetic	3 " "
Geography	3 " "
Nature Science	4 " "
Handwork (Sewing, etc.)	9 " "
Physical Culture	6 " "
Singing	2 " "
Writing	about 24 " in all.
Reading aloud	

THE PEOPLE'S HIGH SCHOOL AT VALLEKILDE.

This represents the type which includes the industrial vocational. Mr. Valdemar Bennike made the following statement to a company of English visitors in 1909.

The students are of all ages over 18 years, most of them between 20 and 25, and come from all parts of the country and all classes of society, though the majority belong to the class of small freeholders and cottars, which is so numerous in our country.

Now I should like to give you the picture of a single day here in the winter months, when we have from 190 to 200 young men under our care from the beginning of November to the end of March.

The bell rings them up at 7 o'clock in the morning. They then dress, make their beds,sweep out their rooms,wash, and at 7.30 are ready for a cup of coffee and a bun.

At a quarter to eight the principal (Mr. Paul Hansen) has morning prayers with his household; there also are to be found most of the students, though attendance is not compulsory.

At eight o'clock, four mornings in the week, I give a lecture on geography, and thereby I try to show the audience what relation there is between man and the earth, and how far the people in the various countries have succeeded in reducing the soil to subjection. A song suited to the theme is sung before and after all lectures. On the two other mornings our Free Kirk clergyman lectures on Church history.

Breakfast comes at 9.15 and consists of a couple of sandwiches and a glass of home-brewed ale.

At half past nine the artisans go to a special department in a house a few minutes' walk from here, where they are taught what belongs to their various trades; carpenters in one room, bricklayers in another, painters in a third, and so on. Most of their time there is taken up in learning to execute working drawings. Likewise the fishermen go to their special department, where they are taught navigation and all the natural history of fishes and other water-animals, sea-plants, etc.

The farm-lads stay here in the central building and are divided into four classes held in various rooms; and for two hours practise writing and drawing. From twelve to one the principal gives a lecture on the history of Denmark, the political history as well as the history of civilization, dwelling more especially on the lives of noted men and women of the last century, whose work we are continuing.

At half-past one comes dinner in the large room below.

At half-past two the artisans and the fishermen go to their own departments again until six o'clock. The farm-lads in the meantime are taught accounts and arithmetic for an hour in two classes. At half-past three these last have gymnastics according to Ling's system.

At five various teachers lecture to the farm-lads only, on physics, on the geography of Denmark, on hygiene, and on the history of the world.

At six supper is taken.

From 7.30 to 8.30 lectures for the whole school are given on the history of Danish literature by Mr. Hansen, and on various subjects by the other teachers, Mrs. Hansen twice a week reading aloud from the best of our poets, and I once a week showing lantern slides or glass photographs from all parts of the world, and explaining them to the pupils.

From 8.30 to 9.30 the artisans and fishermen have their gymnastics while the others have leisure time for the rest of the evening. But you will understand there is not much leisure time for any of them; what there is is used for writing letters, reading, conversing, playing or short walks.

At 10.30 the electric light is put out in the schoolrooms.

Since Vallekilde School was begun by the late Ernest Trier, in 1865, it has had 11,416 pupils—6,391 men and 5,025 women.

THE PEOPLE'S HIGH SCHOOL AT ASKOV.

The timetables of the High School at Askov are illustrative of those of other schools, although there is wide variation in their arrangement at different schools.

SUMMER COURSE FOR YOUNG WOMEN (3 MONTHS).

Hour.	Monday	Tuesday.	Wednesday	Thursday.	Friday	Saturday.
8–9.	Social Science.		Geography.		Nature History.	
9–10.	Physical Culture.					
10–11.	Danish.	Arith.	Danish.	Arith.	Danish.	Arith.
11–12.	History of Literature.		Universal History.			
	Dinner.					
1.30–2.30.	a. Drawing. b. Handwork.	Handwork. Drawing.	Drawing. Handwork.	Handwork. Drawing.	Drawing. Handwork.	Handwork. Drawing.
2.30–3.	Singing.					
3.15–4.15	Reading.	Hygiene.	Reading.	Hygiene.	Reading.	Danish.
4.30–5.45.	Handwork.					
6–7.	Lecture.					

WINTER COURSES FOR YOUNG MEN AND YOUNG WOMEN IN THE ADVANCED OR EXTENSION SCHOOL.

(6 Months Each).

FIRST WINTER.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
8-9.....	History of Language.		Mathematics.		Hygiene.	
9-10.....	Physical Culture.					
10.30-11.30	Natural History.		Universal History.		Natural History.	
11.30-12.30	Discussion on Norse History.	Discussion on Physics.	Geography.		Arithmetic.	
12.30-2....	Drawing.					Discussion on Mathematics.

Dinner.

3.15-3.45..	Singing.					
4-5.....	Social Science.		English. German.	Lecture.		English. German.
5-6.....	Danish.	Danish.	Discussion on Universal History.	Danish.	Discussion on Universal History.	Danish.
6-7.....	History of Literature.			Norse History.		

SECOND WINTER.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
8-9.....	Applied Mathematics.		Geography.		Universal History.	
9-10.....	Physical Culture.					
10.30-11.30	Natural History.		Universal History.		Natural History.	
11.30-12.30	Algebra.	English. German.	Algebra.		Discussion on Universal History.	English. German.
12.30-2....	Drawing and Laboratory Practice.					
	Dinner.					
3.15-3.45..	Singing.					
4-5.....	History of Religion.		Social Science.		Biology.	
5-6.....	Reading Room.		Discussion on Norse History		Danish.	
6-7.....	Literature.				Norse History.	

SECTION 5: THE AGRICULTURAL SCHOOLS.

The Agricultural Schools have grown up out of the efforts of the farmers and their leaders to instruct and train young men for following farm life without subjecting them to influences from surroundings, instruction or occupations which would be likely to wean them from country life.

They are all residential schools; the pupils live together in a manner similar to that which has been described at length under the People's High Schools. In addition to the class rooms, and a small museum stocked with specimens useful for illustration and demonstration, the Agricultural School has a farm connected with it as part of its equipment.

The farm is not managed or run as an experimental station, and only to a very small extent does it use illustration plots. An illustration is given of the management of the farm as a whole according to the system and methods

which yield the best results in the locality. The Principal is also the managing farmer. The preservation and increase of fertility, and the quantity, quality and suitability of the crops for market and for consumption, are considered. The numbers and the kinds of live stock are determined by the capacity of the farm as directed towards making profits. Since the institution receives a comparatively small grant from the State, it must be managed as a profit-making establishment, or at least in such a way as to make ends meet after paying salaries and providing for the upkeep.

At several places Agricultural Demonstration Stations, which are subsidized by the State and are not connected with the Agricultural Schools, offer additional opportunities for the students to observe the nature and progress of experiments. These are mainly directed towards the illustration of methods whereby the scientific knowledge and principles, that have been proven of value, are applied to land, crops and live stock for profits.

The Agricultural Schools generally are located each close to one of the People's High Schools, and in some cases some of the teachers lecture in both schools.

Like the High Schools, they are private enterprises receiving a small subsidy from the State, varying from about $1,500 per annum downwards according to size and public service rendered. The combined subvention received by each Agricultural School from the State and the Local Authority averages about $1,000 per annum.

The State grants Scholarships to assist needy students. The conditions are similar to if not quite identical with those which obtain in the case of Scholarships for the People's High Schools. Scholarships are from 100 Kroner to 150 Kroner per student and cover about one-half of the expense including travelling, books, etc.

Students and Courses.

The Agricultural School, which at first grew as a branch from the High School stem, follows the High School methods, but has agriculture and the related sciences as the main portion of its subject matter. Students pass no examination for admission and receive no certificate at the end of the course.

After leaving the elementary school at 14 years of age, the boys return to their homes for a few years; then, after 18, they go for one or two winters to People's High Schools to continue their education. They then return to farming, or first take a course at an Agricultural School. The popularity of these Agricultural Schools and the proof that they meet a felt want among the people, is made clear by the fact that each winter they are attended by about 2,000 pupils.

Students are admitted from 18 to 25 years of age. They all come with a practical knowledge of farming operations and of farm work and management. The instruction is theoretical, the aim being to leave the students with clear ideas of the application of the principles of agricultural science to farm work and management. An effort is also made, by lectures and otherwise, to let them

acquire such an understanding of their work that they will like it better and have an intelligent appreciation of its relation to the progress and prosperity of the community.

The ordinary course continues five or six months. At some of the schools a number of the pupils continue three months longer for special studies of plants and matters suited to the work of the summer months. To this extent it may be said that two courses are provided—one of five or six months from November to May and a fuller and more extended course continuing during May, June and July. August, September and October are vacation months alike for the People's High Schools and the Agricultural Schools.

Gymnastics by Swedish Method.

All the Agricultural Schools have Gymnasiums of large size for the number of pupils. Here, as in the People's High Schools, the system of gymnastics followed is the Swedish, which lends itself to the training of the students without much apparatus.

The method of this gymnastic is very simple. It uses very little apparatus, and may even be carried on without any whatever. All it requires is a large open floor or a hard clay court. Bars and ladders and wooden horses are used where available, but they are not essential. The system is primarily a scheme for general bodily exercise prompted by individual will power. It seeks to cultivate the will through the greater control of the body. It is, indeed, a system of carefully thought out organic education. Like all true sense culture, it belongs more properly under the head of mental culture than under the head of what is commonly meant by physical culture. Notice some of its fundamental principles. It dispenses with music, because the rhythm then becomes the guiding factor in place of the human will. It dispenses with all action on the part of the instructor during the class movement, for this would substitute imitation for the directing power of the will. Both of these provisions are very subtle, and they do accomplish their purpose. The movement is explained and illustrated by the instructor, and each child knows perfectly what is to be done. But he must do it himself of his own volition and quite unaided by music or model. All commands are short and clear, so that they may reach the intelligence with the utmost directness and speed. The response must be equally quick and direct. The first command—"Attention!" asks that the faculties be alert and ready to act, and the body in a suitable position of vantage. The second command names the part of the body to be called into action. The third command tells the direction of motion. The last command describes the motion and calls for it. Thus: "Attention—right leg—upward—bend!" Each word is spoken quickly and distinctly. The exercise is not only meant to develop the body through the muscular exertion required, but still more to develop the power of command. The exercises are all light, and the majority of them would scarcely bring fatigue if persisted in for considerable periods of time. But where the system is well carried out, and the commands follow one another in fairly rapid succession, mental fatigue comes before muscular fatigue, and indicates very positively where the work is being done. The whole purpose of the Swedish drill is to increase the health of the body, to make it alert, quick, usable; above all, to put it under the absolute control of the will. (From "Education and the Larger Life," by C. Hanford Henderson; Houghton Mifflin Company, Boston, Mass.)

THE LADELUNDE AGRICULTURAL SCHOOL.

This school in the vicinity of the People's High School at Askov may be taken as a type of the best and largest Agricultural Schools. It was established in 1879. The school farm contains 80 acres. The institution is owned and managed by the Principal or Director. It has extensive laboratories where much work is done in the analysis of feeding stuffs and artificial fertilizers. That is done under arrangement with Agricultural and Co-operative Societies.

The Agricultural Course continues 5 months. It is attended by about 100 students.

There are four other courses:—

For Creamery Buttermakers, 5 months (Nov. to March);

For Testers for Dairy Record Associations, 6 months (Nov. to April);

For Creamery Buttermakers, 4 months (April to July);

For " " " in testing milk and cream, (September).

The Agricultural Course of 5 months includes subjects as follows:—

Subject.	*Time.*
Agriculture (including soils, plant cultivation, rotation of crops, manuring, plant diseases, etc.)	150 hours.
Management of live stock (including poultry)	180 "
Danish	60 "
Arithmetic	60 "
Book-keeping	30 "
Drawing	20 "
Chemistry	70 "
Physics	70 "
Botany	10 "
Geology	8 "
Bacteriology	15 "
Agricultural History	15 "
National Economy	12 "
Surveying	20 "
Dairy Work	12 "
Machinery and Implements	18 "
Physical Culture	1 hour daily.

The fees for tuition, board and residence are as follows:—

1st month, 47 Kroner; 2nd month, 42; 3rd month, 37; 4th month, 32; 5th month, 27.

The total fees for the 5 months' Course are equivalent to $48.

THE AGRICULTURAL SCHOOL AT LYNGBY.

This school is managed on the same general plan as the Ladelunde School. A farm of 15 acres belongs to the school. Close by it are a People's High School, and an Experimental Station. In the vicinity is a remarkable museum which represents the externals of the progress of Danish peasant life from the rude conditions of one thousand years ago. A series of buildings resemble those of many centuries, with utensils, tools, implements and weapons of the periods themselves.

In another building there is a permanent exhibition of modern agricultural implements, to which manufacturers and agents send machines, implements and apparatus, with particulars of prices. The exhibits must be left for one year at least, at the end of which time they may be left, taken away altogether, or replaced by newer or other articles.

The School is attended by about 120 students. The students who take the 9 months' Course are in a separate class from those who take the 6 months' Course. They take a few subjects together.

THE AGRICULTURAL SCHOOL AT DALUM.

The school was founded in 1886. It is private property, owned by the Director, but established by the financial aid of a great number of farmers, chiefly small proprietors, from the whole island, who felt the need of such a school. The State and Local Council grant yearly subsidies in furtherance of its work. All the pupils are boarded and lodged at the school. It has two chief Courses annually, one in Agriculture and one in Dairying, besides occasional short Courses for special purposes. The pupils come from all parts of the country.

1. *Agricultural Course.* This Course extends over six months (November to April). There are about 140 pupils, mainly the sons of small proprietors, their ages varying from 18 to 35 years, the average being 23 years. Nearly all are pupils from the elementary schools, but the majority have spent five months at a High School before coming to Dalum.

For such subjects as Arithmetic, Drawing and Land-Surveying the pupils are divided into two or three classes, according to ability. All the other subjects are taught in common by means of daily lectures and frequent oral discussions for which the pupils prepare themselves by means of text-books. There is no terminal examination and no leaving certificate.

The chief subjects taught are: (1) physics, chemistry (soils and their treatment); (2) anatomy and physiology of animals; (3) botany (including plant pathology), the cultivated plants and their culture; (4) tending and feeding of stock; (5) dairying; and (6) agricultural book-keeping. Besides these subjects, series of lectures (without examination) are given in political economy, the history of agriculture, and general history. The school day extends over seven to eight hours;3-4, lectures;1-2, discussions; 1, gymnastics; 2, land-surveying, arithmetic, etc. The State grant is $792 a year, the subsidies from the County Councils of Fyen amount to $288. Some of the poorer pupils get about $36.40 (about half the expense incurred) from a Government grant distributed by the County School Boards. The cost of the course, including instruction, board, lodging, and the necessary books, amounts to about $13.20 per month.

2. *Dairying Course.* This course extends over a period of four months (April-July). There are about 25 pupils, of an average age of 22 years, who have been working from 3 to 8 years in butter and cheese factories. Their previous education is similar to that of the winter pupils, and the mode of teaching is similar to that in the winter course. Besides arithmetic and writing the following subjects are taught:—

Physics (including mechanics and engineering chemistry); botany (including elementary bacteriology); anatomy and physiology of animals and their tending and feeding; dairying (history and general theory); practical instruction is given in milk-testing (Fjord and Gerber systems), in general book-keeping and differential reckoning (Fjord system) for the paying of the milk according to the cream percentage.

A special subsidy of $528 a year is given by the Government for the dairying course. In connection with the school a model dairy is maintained, to which the Government contributes $264 a year. The poorer pupils obtain grants of

about $28.80 each through the local authorities, the total cost of the course amounting to about $50.80. Besides these two main courses the day school occasionally gives short courses (1-4 weeks in duration) for crofters and small farmers in milking, testing of milk, and the working of small farms.

3. *The Farm.* The farm attached to the school is run on business principles and for profit, in such a way as to serve as an example to ordinary farmers. The pupils are made acquainted with the whole book-keeping of the farm, and are allowed to examine the stock and general work, but no practical farm work is directly taught in the school. The farm is 92 acres in extent, excluding the space occupied by buildings, garden, and football field. It is divided into nine fields of equal size (9½ acres), besides a field of permanent pasture. The soil is very variable. The following is the rotation of crops:—

1. Rye.
2. Sugar beets and seed mangolds.
3. Oats.
4. Mangolds.
5. Barley.
6. Oats.
7. Clover and grass.
8. Grass.
9. Mangolds and different forage plants.

The average yield per acre is about 50 to 60 bushels of grain, 25 tons of mangolds, and 15 to 16 tons of sugar beets.

The stock consists of 30 milking cows, 20 bulls, heifers and yearlings, 100 pigs and about 150 fowls. The breed of cattle is the Red Danish.

In winter the rations of milking cows in full milk are 4½ lbs. hay, 11 lbs. straw, 80 lbs. mangolds, and from 7 to 11 lbs. cake. During the summer about half the daily fodder (cake and hay) is given in the stable, the other half they get in feeding outside (tethered).

The average produce amounts to 8,700 lbs. of milk or 340 lbs of butter per cow.

SECTION 6: THE HUSMAND SCHOOLS.

There are 3 Husmand Schools in Denmark. They were established as private enterprises, to meet the recognized need of the Husmand (small farmer) for special instruction in the small cultures of his occupation.

THE SCHOOL AT RINGSTED.

The School at Ringsted is typical of the others . It and one at Barrov in West Jutland each received a State grant towards their establishment, in the form of a loan of 60,000 Kroner at the rate of 3% interest. The grant from the

State towards maintenance is 6,000 Kroner per annum. The School has two excellent demonstration kitchens for cooking. There are ample experimental plots for cereals and fodder crops; and illustration areas for general farming, for stock-keeping and fruit and vegetable growing, with large poultry premises.

The School was founded in 1903. By the end of the sessions of 1910-11 the Courses of 5 or 6 months each had been taken by 668 men and 610 women; and the short 11 day Courses by 1,592 men and 1,926 women.

The Summer Courses are of three kinds:—

A 6 months Course for young gardeners;

A 6 months Continuation Course for young farmers;

A 5 months Course in housekeeping.

The Winter Courses are of four kinds, and are each of 6 months:—

A Course in agriculture;

A Course in industrial work;

A Course in gardening;

A Course in housekeeping.

During both summer and winter there are 9 different 11-day Courses for men and women. These include agriculture, horticulture, care of animals, bees, fruit-growing, flower growing, cooking, dressmaking, maid-servant work and care of children.

The instruction is both theoretical and practical. During the summer students have 3 hours of lectures and 8 hours of practical work daily. In addition to the subjects already mentioned, instruction is given, to those who desire it, in some of the homely crafts, such as soldering, broom-making, cobbling, etc. In addition, there are studies and training in reading and reckoning, gymnastics, singing and general lectures.

Fees, Finances, Motto, Etc.

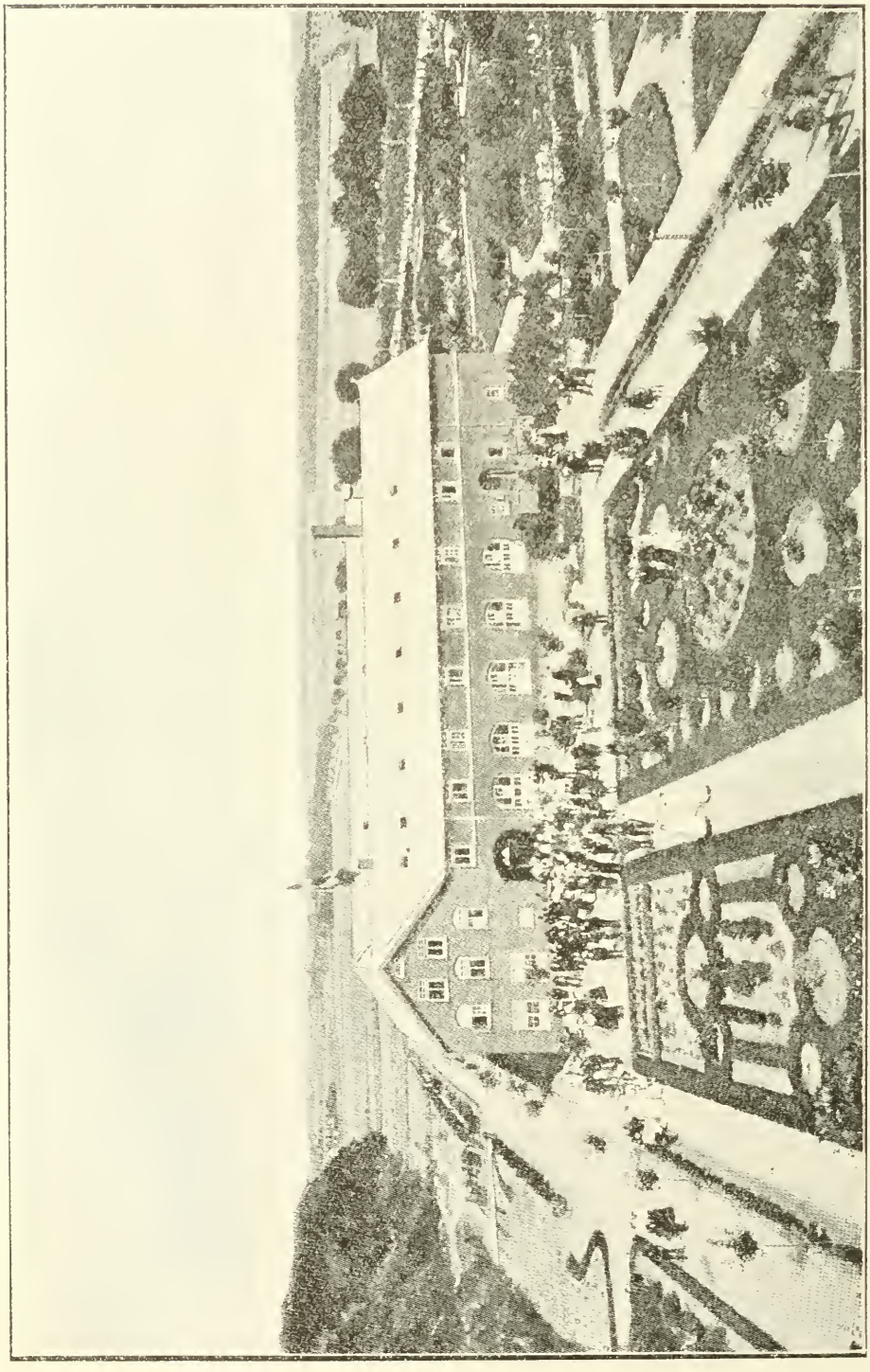
The fees for the 5 and 6 months Courses amount to 200 Kroner and 240 Kroner respectively. The fee for the first three months is at the rate of 45 Kroner per month. It drops to 25 Kroner for the last month. The fee includes instruction and board. An additional fee of from 18 Kroner to 36 Kroner is charged for the whole Course from those who have single, double, or four-bed rooms with special conveniences or comforts.

The State grants Scholarships up to 30 Kroner per month to enable students to attend.

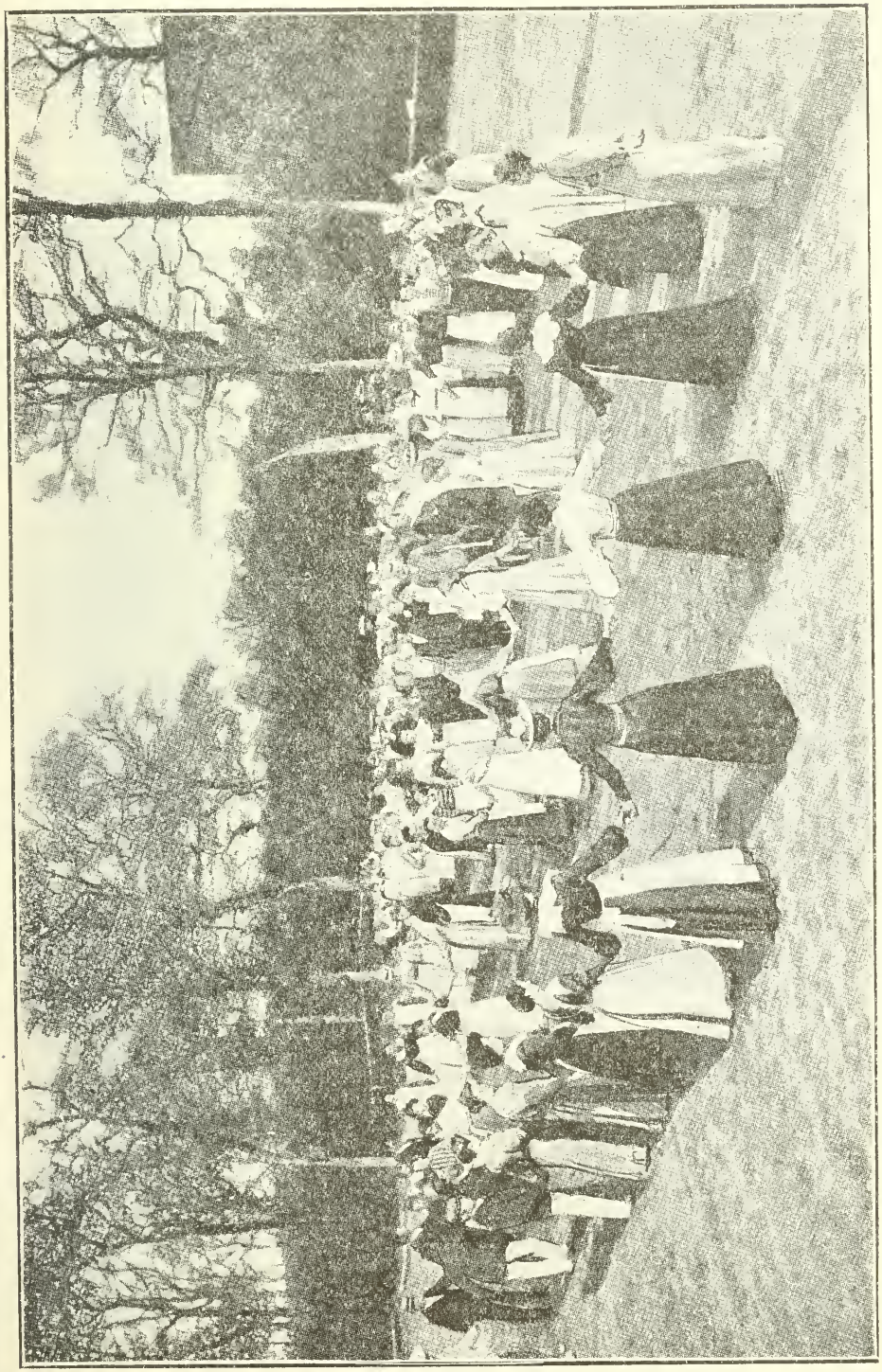
The fee for the 11-day courses is 30 Kroner for each Course, including board and residence.

The State grants Scholarships, including an allowance for travelling expenses, for these short Courses.

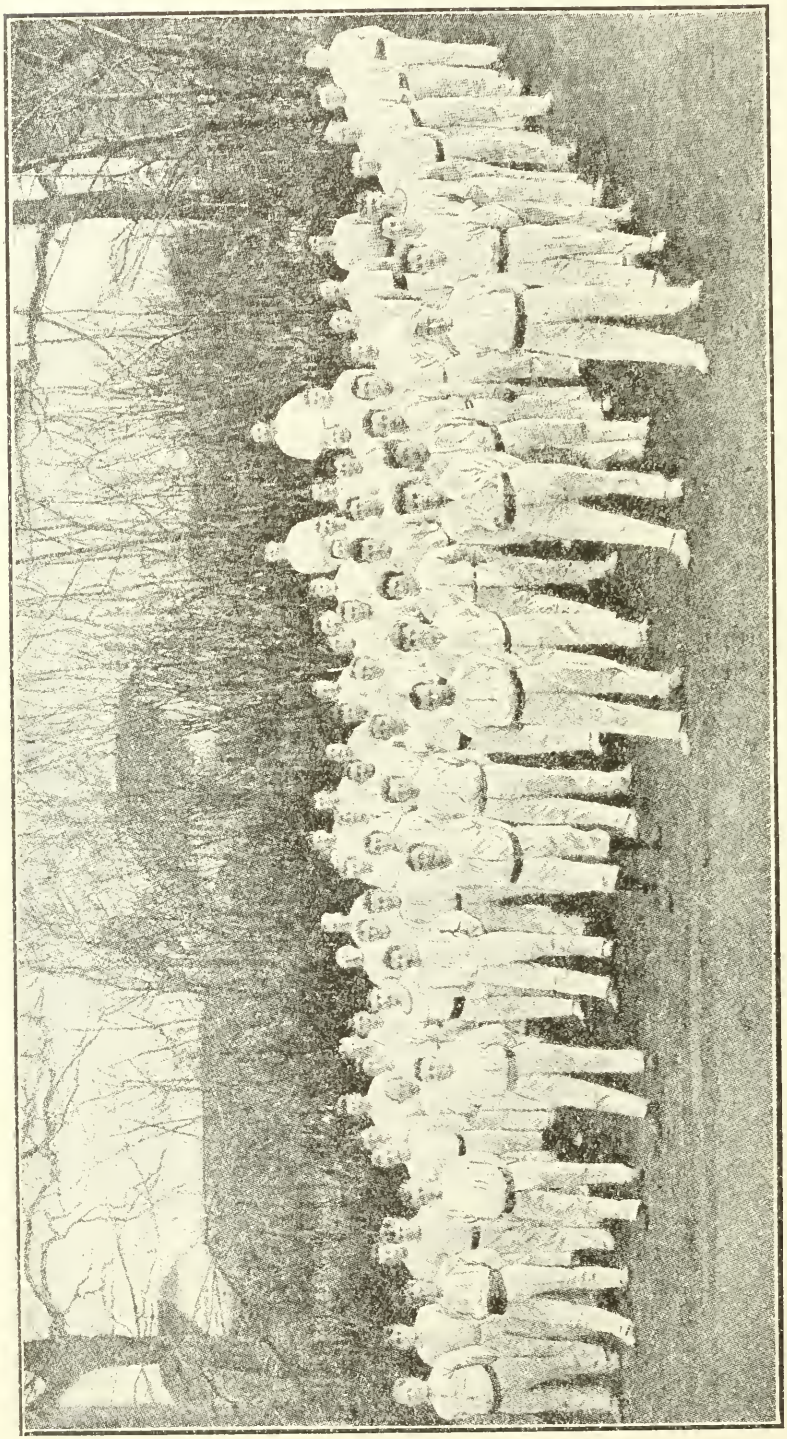
About 40 men and women were in attendance at one short Course during the visit of the Commission. As distinguished from pupils in the People's High Schools, they are encouraged to use their notebooks freely—at least those whom we observed were doing that.



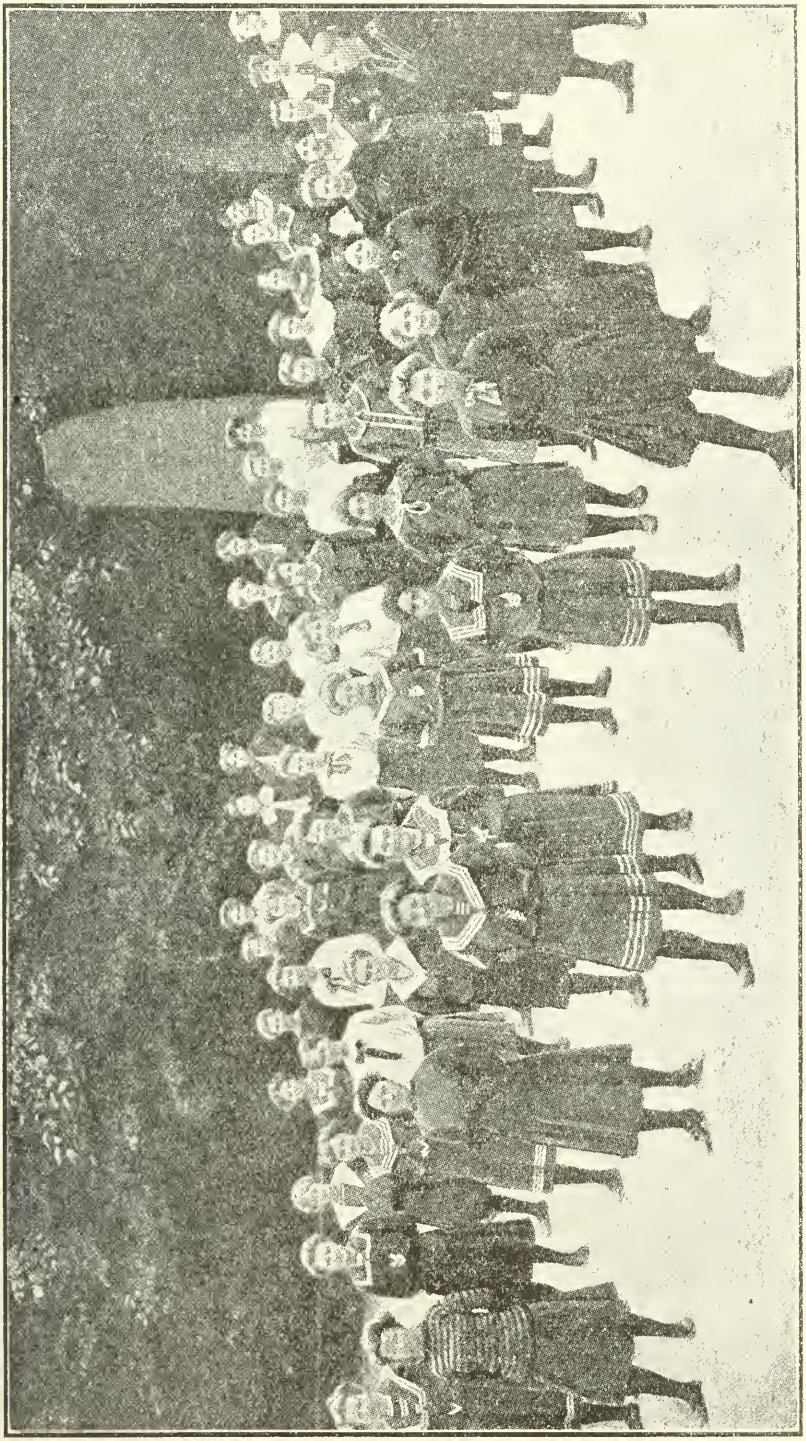
Hermann School at Prescott



RECREATION AT RINGSTED.



PHYSICAL CULTURE AT RINGSTED.



PHYSICAL CULTURE AT RINGSTED.

The motto and device of this school are an example of the spirit and aim which seem to permeate the People's High Schools, the Agricultural Schools and the Husmand Schools. A free translation of the motto runs thus:—"He who does what makes other people happy, will be still happier himself". The device is an owl on a spade. It does not require much power of interpretation to think of that as Wisdom and Work.

SECTION 7: A SCHOOL FOR WOMEN FOR RURAL HOUSEKEEPING.

A few miles from Askov, a visit was paid to an institution for training young women for the duties of housekeeping and associated work at farm homes. As in the case of the People's High Schools and the Agricultural Schools, the institution is owned and managed almost independently by the Director and his wife, who are the principal instructors. Two Courses are held in the year, each lasting five months. Twenty young women are received each time. They are mostly from the families of farmers, who own and cultivate farms of from thirty to sixty acres. The students live in the institution. The cost of the Course for five months, including board, is 200 Kroner per pupil. The school has been going during five years. The classes are in housekeeping, cooking, sewing, dressmaking, gardening, poultry keeping and dairy work. They are for the direct purpose of training and informing young women in such a way that they may be competent in the duties that await them at the farm homes to which they return.

The following brief statements may be more useful than a mere printing of the headings of subjects of the Course of study.

The 20 pupils are divided into 3 groups. One group spends one month in the family kitchen, that is the kitchen which is used for the family of the principal and the teachers. The group of students is allowed 55 ore (13c) per day for each person in the group. They are expected to provide and serve wholesome meals within that amount.

During that month another group of pupils spends the time as follows:—One week in the institution kitchen, receiving instruction and being trained and gaining experience by practice. The following week, the forenoons in cleaning the rooms and preserving fruits, and the afternoons in gardening or other outside work. The third week, again in the institution kitchen. The fourth week, the forenoons in the care of the rooms, with sewing and dressmaking, and the afternoons in laundry work and ironing.

The pupils of the third group take the same kind of work as those of the second group, alternating with them in the institution kitchen week about during the month. The following month the second group changes with the first group, and in the next month the third group has its chance in the family kitchen. The six or seven pupils in each group stay together as a group during the whole of the course. The principal's wife, who is a trained and experienced teacher in Domestic Science, spoke well of the advantages of small groups of pupils over individual or separate work and study.

How the Day is Spent.

The following table will illustrate how a day is spent;—

First Group.

5.45.....Get up; arrange rooms.
6.30.....Oatmeal breakfast, with morning singing.
7 to 8.....House cleaning and laying table for family.
8.....Breakfast of family and teachers.
8.30 to 9.30.....Lecture.
9.30 to 12.....Practical work in the kitchen.
12 to 2.....Dinner and cleaning up.
2 to 2.30.....Rest, or have time to themselves.
3.30.....Coffee.
4 to 5.....Lecture.
5 to 8.....Free time, except for those who, in turn, make the supper.
8 to 8.30.....Supper.

Second and Third Groups.

5.45.....Get up; arrange rooms.
6.30.....Oatmeal breakfast, with morning singing.
7 to 7.45.....Theoretical instruction as to what is to be done during day.
8.30 to 9.30.....Lecture.
9.30 to 12.....Practical work—cleaning rooms, preserving fruits, or alternate weeks sewing and dressmaking. (Three of the group lay the table for dinner).
12.....Dinner.
1 to 3.30.....Gardening or other outside work; on alternate weeks work in the laundry.
3.30.....Coffee.
4 to 5.....Lecture.
5 to 8.....Free time.
8 to 8.30.....Supper.

In addition to the foregoing, students are expected to read a good deal, to write reports and to make calculations in connection with the work they do.

At the beginning of the Course ten periods are devoted to general instruction. After that, while they are working in groups, all the twenty pupils receive instruction in one class by lectures from 8.30 to 9.30 in the forenoons and from 4 to 5 in the afternoons. During the Course twenty-five dinners are studied as to the nutritive value of the commodities which make them up. The value of the food was put at from six to seven cents for a two course dinner per person. Each group, during some time in the Course, receives instruction in cookery for invalids.

Each student has a plot of about 25 ft. x 18 ft. in the garden for practice and instruction work. Each grows some of all the common vegetables on the plot. Besides these plots, there are larger plots which are rented by the groups of students from the proprietor, worked by themselves and used to provide most of the vegetables for their food. This is done for the sake of economy and also for the training which the girls receive in management in all its applications.

As in the case of the People's High Schools and Agricultural Schools, the poorer pupils may receive a bursary or Scholarship. It amounts to 25 Kroner per month, which, as in other cases, would pay about half the total cost of the five months Course when the cost of travelling to and from school, books, etc. are added to the 200 Kroner charged for the course itself.

Short Courses of fourteen days each are given three times during the year. Ten pupils are received at a time for the short Courses.

An example of the kind of work which is being done elsewhere: At the cooking school in connection with the Agricultural School at Haslev, 20 students from the adjacent People's High School receive instruction during their three months' Course; and a five months Course is provided in winter for girls of the locality. Before the cooking schools became common, there were travelling teachers for the wives of Husmend.

SECTION 8: ROYAL AGRICULTURAL AND VETERINARY INSTITUTE.

The following statement from the Report of the visit of the Scottish Commission on Agriculture to Denmark in 1904 describes the Royal Agricultural and Veterinary Institute at Copenhagen as fully as may be useful for Canada. The Canadian Commission concurs in the expressions of appreciation by the Scottish body.

The Royal Agricultural and Veterinary Institute in Copenhagen is the supreme teaching body (in Agriculture). This magnificent institution, which alike on account of its size, its revenue, its staff, its equipment, and the valuable contributions to agricultural and dairy science that have emanated from its research laboratories, forms one of the finest and most important colleges in the world, was established at the expense of the State for the purpose of training veterinary surgeons, teachers of agricultural science, agricultural experts and land stewards, and the sons of the larger farmers who desire to add to their knowledge of practical farming a complete course of training in the sciences relating to it.

The college buildings occupy a convenient situation in their own grounds at the outskirts of the city. They afford very ample and suitable accommodation. The main building forms three sides of a large quadrangle, and it contains about ten lecture rooms and about thirty additional rooms occupied as laboratories and museums. The rooms are all large, lofty and well lighted, and the numerous museums are filled with immense collections of illustrations and specimens of surpassing interest and value.

The veterinary department, in addition to its lecture rooms and museums, occupies a separate building in the fourth side of the quadrangle, which is separated from the main college building by a space of about 40 yards. This distance is found to be sufficient to prevent any nuisance from the live stock kept in the stables and hospitals. No live stock is kept at the college except what is required for the instruction of the veterinary students.

Students and the Courses.

The total number of students attending the college during the past session numbered about 300, of whom 130 were students of Agriculture proper, including Dairying, while the remainder were students of Forestry, Horticulture, Land-Surveying, and Veterinary Science.

The Course of study in Agriculture extends normally over two years, but a supplementary third year's Course is given, and is attended usually by a small number of advanced students who are qualifying for appointments as agricultural teachers. No shorter Courses of instruction are arranged than for a period of two years. Formerly many students attended the classes for one year only, but now the great majority take the full two years' Course.

The veterinary students' Course extends over four or even five years, and the full Course is taken by all the students, as that is essential to enable them to pass the necessary examinations.

Of the total number of agricultural students, Professor Bang expressed the opinion that about one-half intended to return to farming, and the remainder were preparing themselves for various situations.

The students, as in the Scottish universities and colleges, are non-resident, and provide their own board and lodgings in the city as they please. The fees charged for the regular Courses of instruction are very low, amounting to not more than $14 to $19 each.

Theoretical Instruction and Research.

Alike in the agricultural and veterinary departments the subjects taught, and the arrangements of the classes, are similar to those in all similar institutions in this and other countries, and need not therefore be detailed. It is however, important to note that no farm is attached to this great college, nor is any attempt made to teach the students any branch of practical farming. The instruction given is purely theoretical, and the students are expected to acquire a knowledge of the practice of agriculture—where alone it can be learned— on the farm itself. The staff of the college includes 22 professors and lecturers, besides 12 assistants and tutors, and contains in its ranks a number of able men, of whom Professor Bang has a world-wide celebrity on account of his important researches and discoveries in animal tuberculosis. Attached to the college are large research laboratories, which receive an annual subsidy from the State of about $36,960 per annum, in addition to the annual subsidy of $70,040 given to the college. It is entirely due to this liberal support that the staff and equipment of the college have attained to such a high standard of ability and completeness, and that it has been possible to carry on these researches, which have produced results of such wide-reaching importance, not only to the dairy industry of Denmark and of the world, but also to the whole human race in those countries where tubercular disease has been for so long a dreaded scourge.

CHAPTER XXIX: AGRICULTURAL ORGANIZATION IN DENMARK.*

Agricultural organization has contributed materially towards the general development of Danish agriculture. Though old in years it is only within the last generation that it has really developed and branched out.

Denmark possesses many conditions favorable to growth of organization. Distances are short; population is comparatively dense; the people, generally speaking, live under similar climatic and economic conditions; and through their municipal system, founded in 1840, and through the influence of the Rural High Schools and Agricultural Schools they have gradually become ripened to support a well-developed organization.

The great railway extensions (1870-1880) created a new freer outlook for the people, and did much towards neutralizing the peculiarities and social class distinctions of individual districts, removing the former sense of isolation, facilitating personal contact and thereby that sense of co-operation which is the foundation of a richly organized life.

When hard times at the close of the seventies rolled over Danish agriculture like a tidal wave, refuge was again sought in that help which had formerly stood the test—organized effort. A large number of organizations were started which have undoubtedly done a great deal towards enabling the people to successfully ride the storm.

The Royal Danish Agricultural Society.

This is the chief corner-stone of agricultural organization, being not only the oldest organization of its kind in Denmark, but as stated by the celebrated historian, Prof. Edward Holm, "undoubtedly the first organization of importance which has been formed in our Mother Country for the purpose of promoting a great national aim". Its establishment in 1769, in the period preparatory to the great agricultural reforms brought about at the close of the century, was the result of the agrarian agitation of that day; and from its very inception the Society secured the co-operation of many of the best men of the country in its work for economic progress in Danish agriculture.

During the past four and a half generations the Society has promoted and carried through a multiplicity of useful measures which changing times and conditions have suggested, and which were considered beneficial to agriculture. It has nursed them, tested them, and when they succeeded brought them over the difficult starting points until they could be safely transferred to the State or to independent institutions.

*Condensed from a statement kindly provided by Mr. H. Hertel, Secretary, Royal Danish Agricultural Society.

The State Government has frequently sought the counsel and acted on the advice of the Society, to whom it has referred the administration of measures which had its endorsement and financial support. This applies at present to the services of consulting experts in the several branches of agriculture; supplementary training of creamery buttermakers; official tests of agricultural machines and implements; and various lines of field experiments which are placed under the immediate supervision of special committees appointed by the Society for the purpose.

Outside of expert matters, the State Department of Agriculture does not directly employ agricultural experts (as in France, England, Norway and Sweden), nor any specially qualified Agricultural Council (as in Prussia and Belgium); hence the Government uses as its advisers the Royal Danish Agricultural Society, the Royal Agricultural College, the Central Co-operative Associations, the Veterinary Board of Health, and others.

Other fields covered by the Society are:—Publication of Agricultural Literature, Training of Pupils, Creamery Instruction, Feed Stuff Control in the Free Port of Copenhagen, and the investigation by committees of matters and conditions of immediate importance to agriculture. The Society endeavors to solve practical questions in a practical way through prize awards and public lectures; awards prizes and medals for agricultural industry, and gifts of books to Parish lending libraries; organizes agricultural conventions; and acts generally as a connecting link between domestic and foreign agricultural institutions. The management consists of 3 Presidents, 36 Directors, Secretary and Treasurer. The Presidents and one-half of the Directors are elected by the members of the Society, the other half by Farmers' Associations, one member for each county. Thus every section has opportunity to affect the activity of the Society, which becomes truly the representative of Danish agriculture.

The membership is between 750 and 800, and the annual fee is 20 Kroner ($5.40).

Farmers' Associations.

When the agricultural reforms were carried through in the latter part of the eighteenth century and conditions were created for rural progress, patriotic men conceived the idea of establishing organizations for "the promotion of morality and ability among the rural population." These developed later into Farmers' Associations, which have greatly increased in importance, and now stand as the organization through which effect is given to the general development of agriculture.

The first local Farmers' Association was founded in 1805; in 1850 there were 25 Associations, in 1860 about 40; now there are 116, with a membership exceeding 86,000, who pay in annual fees 201,000 Kroner (about $54,270).

The activities of the Farmers' Associations are directed more particularly along cultural and technical lines, while as a rule they do not touch social and political problems. Their main efforts include live stock shows, exhibitions and lecture courses. They direct farm competitions, local field experiments, and

the co-operative purchase of fertilizers and feed stuffs; they also carry on local fertilizer experiments, etc.

Some Associations publish official organs for their members; others issue annual reports. A number of them employ consulting experts.

The work of these Associations is managed by Boards of Directors elected by the members at their general meetings, held once or twice a year, in the Spring and Autumn.

Provincial Organization.

To avoid the danger of the work and efforts of the Farmers' Associations becoming weakened or divided on accont of too many locals being established, and as a number of problems presented themselves which could not be handled by their individual limited means, the Local Associations have formed themselves into five Provincial Associations. The latter have developed a great and important activity through the large Provincial live stock shows and exhibitions, through the lecture courses in Local Associations, publication of hand books, herd competitions, establishment of benefit societies, competitions among well cultivated small holdings with educational trips for the owners, establishment of local field experiments and demonstration fields, establishment of domestic science night schools, etc. Each Provincial Association holds an annual meeting of delegates to which Local Associations send representatives, when the programme of the following year's work is discussed and formulated. Such annual meetings of progressive farmers from different localities contribute greatly to the advancement of the work of the Local Associations. Their work is here submitted to a test and investigation that makes for increased solidity; and that brings uniform efforts to bear upon subjects which can be promoted only by being handled uniformly in all localities in the Province.

National Executive.

Many of the problems being identical in all parts of the country, the several Provincial organizations formed, in 1893, a National Executive of 13 members selected from the five provinces. This Executive determines matters that are to be submitted to the Provincial meetings of delegates, and seeks to increase the influence of the Provincial organization with all the Locals included in the Provincial Associations.

Small Holders' Associations.

Although the Farmers' Associations of late years have sought in an increasing measure to assist the owners of small holdings, it was anticipated that the time would come when the latter would demand their own special organizations. In 1901 Small Holders' Associations were started. Although in a measure working along the same lines as the Farmers' Associations, these newer organizations, on account of their special conditions and the difference between the smaller and the larger farms, have paid special attention to matters which the older associations as a rule did not touch, viz:—seed culture, market gardening, bee and poultry keeping, domestic industry, etc.

In 1902 the individual Small Holders' Associations formed five Provincial Associations, and in 1903 a National Executive of 11 members whose object it is to work for organized co-operation among the individual associations, and to represent all the Locals included in the organization in their relations with the State and with other institutions of various kinds.

The five Provincial Associations comprise:—in Jutland 380 Locals with 20,600 members; in Zeeland 198 Locals with 12,000 members; in Fyen 110 Locals with 4,000 members; in Lolland-Falster 20 Locals with 1,350 members; in Bornholm 15 Locals with 1,000 members. This gives a total of 723 Local Associations with 38,950 members; and adding 116 Farmers' Associations with 86,000 members, we have the marvelous showing of 839 Associations of agriculturists with 124,950 members within a territory no larger than that part of the Province of Quebec south of the St. Lawrence River and east of Quebec City.

Special Associations.

During the past two decades a large number of special organizations have grown out of the Farmers' Associations, and these have taken up special problems for solution and have given them closer attention than the Farmers' Associations could possibly bestow upon individual objects.

Horse and Cattle Breeders' Associations were formed after the passing of the Domestic Animal Act of 1887. The first of the *Swine Breeders' Associations* was started in 1894. The first *Sheep Breeders' Association* was formed in 1903. Usually each Breeders' Association includes a parish, and has for its object the development of domestic animals by the use of good sires to selected females owned by the members. There are now about 270 Horse, 1,260 Cattle, 253 Swine and 102 Sheep Breeders' Associations in Denmark. They have all to some extent formed Provincial organizations in order to promote uniformity in their work.

Three large *Poultry Associations* work for the advancement of the poultry industry. Other organizations seek to promote *Bee Keeping*, etc.

The *Dairy Record Associations'* object is to place the live stock industry upon a profitable basis, by the discovery and disposal of unprofitable individual animals. They carry on a systematic investigation and record of the feeding and of the milk and butterfat yield of the individual cows in the herd. Other branches of the farmer's business such as swine, etc., are gradually being brought in under a similar system of control, and conditions are thereby created for an improved system of farm book-keeping. The first Dairy Record Association was inaugurated in 1895; now there are more than 500, and these in turn have organized provincially. The work of these Associations is being copied by other countries and is receiving considerable well merited attention abroad.

Finally, reference may be made to a number of branch organizations of the parent stock which seek to improve the fruit industry, gardening, plant culture, etc., but space does not permit of detailed description.

The *Agricultural Credits Associations* were established under Law of 26th March, 1898. Their object is to advance to their members temporary loans for current working expenses. The loans may not exceed 3,000 Kroner ($810)

in amount nor nine months' time in a year. The State Treasury has placed 5,000,000 Kroner at the disposal of these Associations, payable in cash and drawing interest at the rate of $3\frac{1}{2}$ % per annum. There are at present 168 such Associations, 123 in Jutland and 45 on the Islands.

Dairying Organizations.

Dairying is the most important special branch of Denmark's agricultural industry, and two kinds of organizations have been formed for its advancement, namely, *The Creamery Associations* and *The Danish Creamery Buttermakers' Associations*.

The former, 21 in number, include 900 creameries. They conduct educational butter shows and lecture courses. They gather and compile statistical information and records to show the economic side of creamery management. They conduct co-operative purchase and distribution of creamery supplies, etc. These Associations have also formed Provincial organizations in Jutland and Salland for the purpose of providing a connecting link between the individual Associations, and on the whole to watch over the interests of the industry. Further, following the example of the Farmers' Associations, the Provincial Creamery Organizations have formed a National Executive composed of the presiding officers of the several Provincial organizations who enquire into and make recommendations regarding subjects which ought to be brought up for consideration and discussion at the annual meeting of the delegates, and on the whole work for united action within the dairy industry.

The Buttermakers' Association was founded in 1887. It works for professional development by the union and increased training and ability of its members. It is divided into 24 Locals, each with its committee of management and self government. It holds an annual meeting of delegates and publishes an official organ. It has now a membership of about 1,800 and is directed by an Executive Committee of 7 members.

These dairy organizations have, in turn, branched out. There are, for instance, six Butter Export Associations of which the most important is *Danish Creameries Co-operative Butter Export Association* with an annual business of upwards of 12,000,000 Kr. Another has an annual turn over of about 8,000,000 Kr.

There are also the *Danish Creameries Butter Marks Association* with a membership of 1,326 creameries. Its object is to use a uniform Trade Mark, registered in Denmark and in England, on all packages containing Danish butter.

There are also the *Danish Creameries' Co-operative Supplies and Machine Shop* and various others.

Co-Operative Associations.

Reference to the Export Associations brings us into the field of organized Co-operation. We consider 1866 as the year of its birth, when the first co-operative store was established, but it is only during the latter two decades under the pressure of declining markets that co-operative activities have gained full power.

The Co-operative Associations have taken up joint purchase and sale, joint production and improvement of farm products.

Through 1,164 co-operative creameries, 38 co-operative pork packing establishments, and more than 1,250 co-operative stores, through Danish Co-operative Egg Exports, through some 20 Associations organized for the purchase of supplies, fertilizers, feed stuffs, etc, they contribute towards the widest possible dissemination of the results of experience gained from time to time. Through them the farmer is in a large measure placed under the control and supervision of his peers, and gradually trained to keep his own wilfulness within certain well defined limits, and let his minor individual interests give way to the greater common interests.

The co-operative principle is gradually creating a feeling of solidarity, a community spirit allied with the best thought of the times.

The several co-operative organizations have joined forces through centralization. The co-operative creameries have already been referred to. The co-operative pork packing establishments have formed an organization, known as *The United Danish Co-operative Pork Packing Association*, to look after their joint interests in relation to the legislative powers, to transportation and market problems, and for the rational development of the swine industry, etc.

The co-operative stores have established a wholesale house from which 1,250 stores are supplied with merchandise.

Danish Co-operative Egg Exports is in reality the union of some 550 Local egg circles.

The several Provincial organizations formed in 1898 the *Central Co-operative Committee of Denmark* to watch their joint interests abroad. Ten Provincial and National co-operative organizations are at present represented on this Committee, and others may obtain representation upon a two-thirds vote of the Committee. "The Co-operative Journal" is the official organ.

The foregoing sketch of the agricultural organization is drawn in broad lines and omits much. For instance, the *Agricultural Mutual Benefit and Educational Organizations* are also worthy of mention, such as domestic servants, workmen, savings and insurance Associations, etc.

Sufficient has been said, however, to convey an impression of the throbbing, comprehensive, practical and energetically directed agricultural organization which in its many ramifications has contributed so much towards agricultural development in Denmark, and which has in several ways served as an example to other countries.

TRAVELLING SCHOLARSHIPS.

For more than half a century, under the auspices of the Royal Agricultural Society of Denmark, grants were made to assist young farmers to visit some of the best farms in the various districts in the Kingdom. The following is quoted from the evidence of Dr. Robertson before the Canadian Parliamentary Committee on Agriculture: "When I went to Denmark first, 25 years ago, I learned that the leaders of the movement for the improvement of agriculture there recognized the value of the teaching power of the most successful farmers in the Kingdom.

The Royal Agricultural Society by means of grants enabled hundreds of young farmers to learn the systems and methods of farming from many of the best farms in the country. These young farmers lived and worked and learned on these selected farms. The period might be three months or six months or a year; and sometimes a young farmer would work on two, three, or even four such farms before he returned to his own home. I, myself, visited a farm where 70 such student farmers were working. They were not going to college to be trained in the theories; they were on this farm to learn how that farmer farmed to make money.

"That farmer kept 250 dairy cows. He also grew a large quantity of sugar beets. I think he had 700 acres in that farm. These young farmers were given instruction in the theories once a week. The practice was not confined to large farms. All over Denmark the best farmers of the locality could have their farms approved and receive these young farmers who came under grants from the Royal Agricultural Society. In general the conditions were that the student farmer must work for three or six months or a year, and at the end of every period write a report to the Society upon what he had seen and done and learned. In a few years the best practice of the best farms became the common knowledge of the farmers of the whole kingdom.

"By means of that system the best farms, where the men were doing remarkably well, became known all over Denmark, and more than that their systems and methods were adopted. Afterwards came the co-operative organizations for creameries, and bacon curing estabishments. These co-operative societies are for managing some part of the agricultural business of the locality and not for doing the farmwork. Every locality is practically doing for itself in detail what the Royal Agricultural Society did for the Kingdom long ago. The community spirit which the Danes have in a very large measure—more than we have as yet, perhaps because of the conditions of their national life in the past—has been applied to the problems and difficulties of the farms; and so they have risen from poverty, from dire poverty after the war with Germany, to being regarded as the most prosperous agricultural people as a whole on the face of the earth to-day. I know localities in Canada where farmers are doing better than in Denmark. I know such localities also in the United States and in England and Scotland. The Danes excel in having levelled up in general; we in Canada excel in the exceptions. Take one illustration. They send large quantities of butter, bacon and eggs to the United Kingdom. They get high prices because of the superiority of the quality resulting from their methods of managing. They take out of the United Kingdom annually over eight millions of dollars more than other nations obtain for an equal quantity of the same products. They get more, as a premium on the quality of their butter, bacon, and eggs, than is spent on our whole system of rural education in Canada. That is a large tribute collected from a foreign nation by the ability of these people. They are using it for further training and further enlightenment and further development. Fifty years ago students were sent from Denmark to Scotland to study agriculture there. Since that time the practice continues for some farmers' sons to spend 6 months, a year or more on Scottish farms.

SESSIONAL PAPER No. 191d

FRANCE.

CHAPTER XXX: OUTLINE OF THE EDUCATIONAL SYSTEM.

SECTION 1: ORGANIZATION AND ADMINISTRATION.

Under Three Ministries.

The different kinds of schools in France are under the control of three different Ministries. The ordinary Primary, Secondary and Higher Schools, the Schools of Art, Normal Schools, Law Schools, Medical Schools and Universities belong to the Ministry of Public Instruction. The Commercial and Industrial Schools, including the General Technical Schools, are under the Ministry of Commerce and Industry. The Agricultural Schools are under the Ministry of Agriculture.

It is claimed that the Industrial, Commercial, Technical and Agricultural Schools gain much from their close relations with the Ministries of Agriculture and Commerce and Industry respectively, which are in touch with the great industrial employers, and find the practical side of their work recognized and appreciated by those who are most interested in it.

What appears to be an anomaly of the system lies in the circumstance that since University Education is under the Ministry of Public Instruction, the higher scientific branches of Industrial and Commercial Education have no organic or direct relation with the lower schools providing less advanced education of the same character. For example, the Agricultural Branch of the University of Nancy, and the Tannery School at Lyons in connection with the University there, are under the Ministry of Public Instruction and not under the Ministries of Agriculture and of Commerce and Industry respectively. In the actual working out of the system the disability of the anomaly is more apparent than real.

Duties of the District Rectors.

For administrative purposes France is divided into 16 School Districts. At the head of each District is a Council which supervises the method of teaching prescribed by the Minister of Public Instruction, acting as a Higher Council of Public Instruction. Each of these Districts is administered by an official known as Rector, assisted by as many inspectors as there are departments (provinces) in the district.

These rectors locally represent the Central Authority, and supervise the provision of education in the Districts which they respectively direct and in

which they reside. As their authority embraces all grades of education, their influence is excellent and effective in regard to such questions as overlapping on the one hand or deficiency in any particular grade on the other. They also furnish an effective medium for spreading the principles of the Government schemes throughout every District, at the same time adapting their application to local conditions.

Functions of the Inspectors.

Advantages accrue from the influence upon education, above the elementary stages, through the local knowledge and influence of the Rectors and the Inspectors.

As the Inspectors are freed from all duties of determining the grants, examining individual children for labor exemption, or passing candidates for any form of teacher's certificate, they are able to give full time and thought to the actual methods and working of the schools, and to criticising, offering suggestions and encouraging the various attempts to improve the education given.

The general Inspectors and Inspectresses of Public Instruction and their assistants have to inspect public schools which provide technical instruction of elementary and secondary grade, schools and courses of vocational instruction supported by the Ministry, and private technical schools of any kind recognized by the State. They may be placed at the disposal of the Ministry of Commerce and Industry for special journeys of inspection in certain schools and Districts.

Three Grades of Education.

In France there are 3 grades of education, each of them including gradations or variations:—

(1) *Primary Education*, to which the great majority of French people are limited, is given in the primary schools and in the lower classes of the lyceums, colleges, etc.;

(2) *Secondary Education*, which is suitable for the children of rich or well-to-do families, and also for talented children of the poorer classes who are able to win scholarships. This education is given in the lyceums, colleges, small seminaries, and in a large number of private institutions;

(3) *Higher Education*, which is given in the Universities and in some special establishments, for those who intend to be doctors, magistrates, lawyers, teachers in the secondary or higher grades, etc.

The teaching is called *public* when it is given by masters dependent directly upon the State, the departments or the communes; it is called *private* when organized by individuals or associations. Public instruction predominates in France, although private teaching also forms a prominent feature of education.

Examinations in all grades are set by the University. The programmes are decided on by the Higher Council of Public Instruction, and therefore all teaching must necessarily be dependent on it. These examinations lead to diplomas which are required when entering the majority of callings.

Education in all its grades has been considerably developed in France within the last 40 years. In 1870 the State spent 32 millions of francs for education; now it spends annually nearly 275 millions of francs ($55,000,000).

SECTION 2: PRIMARY INSTRUCTION.

Primary instruction is compulsory throughout France. This instruction has never been considered by the French authorities as an end, but rather as a means; something indispensable but insufficient; a rendezvous, so to speak, for all, from which each child is to start on his own proper course, a course determined by his taste, aptitude, family and social standing.

The Primary Schools of France correspond with our Elementary Schools, or, to be more definite, with our first seven or eight grades, those which hold the children from their fifth to twelfth or thirteenth year. The French educators discovered that, at the end of this period of training, "some children being better endowed intellectually, and belonging to families of moderate means, in easy circumstances, entered the Superior Schools to complete their instruction there, or the Lyceums or Colleges to prepare themselves for the liberal professions or the Universities. Others (and they form a very large majority), were hardly out of the Primary Schools before they were struggling with the difficulties and exigencies of life. Among this class a few continued their studies in the supplementary courses, but most of them, since they were poor or unwilling to ask their parents to make any greater sacrifices to keep them in school, entered a workshop that they might begin to earn a livelihood at once."

In 1881 primary instruction was made free in all the public schools. In 1882 it was made compulsory for fathers to send their children to school until they had obtained the "certificate of primary studies" or attained the age of 13. Thanks to these measures, the proportion of illiterates considerably diminished. In 1854 it was 21.6% for men and 47.4% for women; in 1870 it reached 25% for men and 37.7% for women; but in 1908 it was hardly 11%.

Public Primary Schools.

The obligatory school age is from 6 to 13 years under the law of 1882. The total enrolment in Primary Schools in 1906–07 was 5,585,025 (divided almost equally between the sexes) of which 4,583,053 were in public schools and 1,011,072 in private schools. In addition to these totals, there were 651,955 pupils in Infant Schools, the establishment of which is optional with the communes, these children being below the obligatory school age.

Children are admitted from the ages of 6 to 14. Outside of these limits the admission of pupils is subject to the authorization of the Academy Inspector.

In communes where there is no kindergarten, the age-limit for admission is lowered to 5 years.

The classes are held 3 hours in forenoon from 8.30; and 3 hours in afternoon from 1 o'clock.

Thursdays, Sundays and feast days are observed as holidays.

Primary education comprises the following:

Moral and civic instruction; reading and writing; French; calculations and metric system; history and geography, with special reference to France; object lessons and primary rudiments of science; elements of drawing, of singing, and of manual work, especially in their application to agriculture; (needlework is taught in the girls' schools); and gymnastics and military exercises.

Education in the primary schools is divided into three courses—Elementary, Intermediate, and Superior In the infant section the course is for one or two years, depending on the age of the child upon entering being 6 or 5 years. The Elementary course is two years, ages from 7 to 9; Intermediate course, 2 years, ages from 9 to 11; Superior course, 2 years, ages from 11 to 13.

Each Primary School is under the care of a School Committee, which looks after the welfare of the children, provides shoes and winter clothing when needed and a warm meal at noon.

Though Higher Primary Education is free, it is not furnished everywhere. For this reason scholarships have been founded for those who are willing to go some distance from home in order to get this instruction, but who cannot afford their living expenses.

On leaving the Higher Primary School those who intend to go into business and who have a taste for the study of modern languages can compete for a scholarship to enable them to reside abroad; and those who intend to go into the manufacturing industries may compete for a travelling scholarship. The secondary teaching scholarships are of old standing and their benefits have been extended to girls. The number of scholarship holders is no longer restricted to the military and naval schools, and lack of means is now a sufficient qualification.

The gates of higher education also have been thrown wide open by means of financial aid to a large number of young persons.

SECTION 3: HIGHER PRIMARY SCHOOLS AND SUPPLEMENTARY COURSES.

Higher primary education was inaugurated in 1882, and to-day there are about 370 Higher Primary Schools and over 600 Supplementary. The Higher Primary Schools were reorganized by a decree and an enactment of January 21, 1893.

The Minister of Public Instruction at that time, Mr. Charles Dupuy, sent a circular to the Rectors on that occasion, of which the following passage is an extract:

What school population do our higher primary schools cater for? Not for young persons who are intended for professional careers, who have an indefinite amount of time at their disposal and who have come to receive high intellectual culture, but rather the children of the laboring classes who will soon have to support themselves by working, and in most cases by manual labor. They do not aspire to classical studies. Their ambition and probable destiny is to fill one of those numerous employments of a medium order which agriculture, commerce, and industry offer to workers, with the prospect of attaining to more and more easy circumstances; but nevertheless only moderately so.

This being the case, the higher primary school must direct the attention of its pupils, from the first day to the last, to the necessities of the practical life which awaits them, and therefore their minds are never distracted for a moment from the pursuit of a calling; and the school carefully avoids giving them standards, habits or ideas which would divert them from the kind of life and work for which they are nearly all intended. And whilst reminding them that democracy has removed the barriers which formerly held the individual tightly imprisoned, it seeks rather to make him love and honor his calling than to dream of means for escaping from it.

In this way, we might mention that higher primary instruction is clearly distinguished from secondary instruction, ancient or even modern, with which it has been confused.

Higher primary instruction (and one of my honorable predecessors has already said so even at the very time when he was reorganising it) must not be by any means a sorry counterfeit of secondary teaching; the higher primary school is not a degenerated college, but a perfected school. Nothing, then, is more necessary and more simple than to prevent any confusion or any ill-ordered rivalry between two orders of establishments which has each its reason for existing.

Higher primary instruction is at once recognized by its absolutely practical and utilitarian character; and in this general sense it is professional (vocational).

But it is none the less real instruction, and is not to be confounded with apprenticeship. It is a school and not a workshop, and those who attend it are pupils and not apprentices. The work of education will be continued there which was commenced at the primary school. Even for workmen (or should we not rather say, particularly for workmen) this culture of the mind it not a misplaced luxury; it forms the judgment, the heart, the will and the character; that is to say, the strength which he more than any one else will need in the struggle for existence.

Therefore our higher primary schools have had this double object in view from the very start: they combine intimately a supplementary general education with the rudiments of a professional (vocational) education.

Distinctions between Higher Primary and Supplementary.

The institutions for higher primary instruction are called *Supplementary Courses* if they are annexed to an elementary primary school under the same management.

They are called *Higher Primary Schools* if located in separate premises and under a different management from that of the elementary school.

The duration of the studies in the Supplementary Courses is one year. The Higher Primary School comprises at least 2 years of study; it is called a complete course if it comprises 3 or more.

In 1906–1907 the higher primary instruction included 87,668 pupils, distributed as follows.

	Public Institutions.		Private Institutions.	
	Boys.	Girls.	Boys.	Girls.
Higher Primary Schools	26,947	18,518	220	293
Supplementary Courses	16,523	13,508	2,784	8,875
	43,470	32,026	3,004	9,168
	75,496		12,172	

In 1891-92 the same instruction had been given to only 45,599 pupils.

No pupil can be received into either a Higher Primary School or a Supplementary Course unless he holds the certificate of elementary primary studies, and also proves by certificate signed by the Primary Inspector that he has attended during at least 1 year the higher course of an Elementary Primary School. Nevertheless pupils who have not prosecuted their studies in a primary public school, if they hold the certificate of elementary primary studies, may be admitted into a Higher Primary School or a SupplementaryCourse on proving that they studied the subjects comprised in the program of the higher course in the primary public schools. This Supplementary examination is undergone before a commission composed of the teaching staff of the Higher Primary School under the chairmanship of the Primary Inspector.

Higher Primary Instruction.

Higher primary instruction comprises:—moral education; civic instruction; the French language and the elements of French literature, French history and the elements of general history, with special reference to modern times; the geography of France and its colonies, and the elements of general geography, with special reference to commercial and industrial geography; modern languages; elements of common law and of political economy; elements of arithmetic and its principal commercial applications; elements of algebra and geometry; the rules of ordinary accounting and bookkeeping; elements of the physical and natural sciences, with special reference to their application to agriculture, commerce and manufacturing; geometrical drawing; ornamental drawing and modeling; gymnastics; wood and iron working for boys; needlework, cutting, and dressmaking for girls.

Technical Sections.

In the schools for complete training, in which there are a considerable number of pupils, there are generally special sections from the 2d or the 3rd year onwards:—agricultural, industrial or commercial.

In all the other Higher Primary Schools, as also in the Supplementary Courses, additional courses may be established for the vocational preparation of pupils who intend to go into farming, industries or business.

Time Tables.

The regulation time tables of the Higher Primary Schools are as follows:—

PROGRAMS OF HIGHER PRIMARY PUBLIC SCHOOLS IN FULL OPERATION.

BOYS

Subjects of instruction and No. of Hours to each (total 30 per week).	General Instruction.			Industrial Section.		Business Section.		Agricultural Section.	
	1st	2nd	3rd	2nd	3rd	2nd	3rd	2nd	3rd
Ethics	1	1	1	1	1	1	1	1	1
French Language	5	5	4	2	2	2	2	2	2
Writing	1	1	1	1	1	1	1	1	1
History and Civic Instruction	1	1	2	1	1	1	1	1	1
Geography	1	1	1	1	1	2	2	1	1
Modern Languages	3	3	2	.....	.....	4	4	.....	.....
Mathematics	4	3	3	3	3	2	2	2	2
Accounting and Bookkeeping	.....	1	1	2	2	3	3	1	1
Physics and Chemistry	2	2	2	2	2	2	2	2	2
Natural History and Hygiene	1	1	1	1	1	1	1	2	2
Agriculture and Horticulture	1	1	1	.....	.....	.....	.....	3	3
Common Law, Political Economy	.....	.....	1	.....	1	.....	1	.....	1
Drawing and Modeling	3	3	3	4½	4½	1½	1½	1½	1½
Manual & Agricultural Work	4	4	4	6	6	2	2	6	6
Gymnastics	2	2	2	2	2	2	2	2	2
Singing	1	1	1	1	1	1	1	1	1
Hours to be distributed according to special requirements				2½	1½	4½	3½	3½	2½

The figures in the columns give the number of hours per week of each subject. The ordinal numbers (1st, 2nd, 3rd) refer to the year of the course.

GIRLS.

(*Total 24 hours per week*)	General Instruction.		
	1st	2d	3d
Moral Education	1	1	1
French Language	4	4	4
Writing	1	1	4
History and Civic Instruction	1	1	1
Geography	1	1	1
Modern Languages	3	3	3
Arithmetic & Elements of Geometry	2	1	1
Accounting and Bookkeeping	.....	1	1
Physical and Natural Sciences & Hygiene	2	2	2
Common Law and Political Economy	.....	.....	1
Drawing	3	3	3
Manual Work and Domestic Economy	4	4	4
Gymnastics	1	1	1
Singing	1	1	1

Details of School Work.

In the first three years of higher primary instruction there is an average of 6 hours of class work daily (Sundays and Thursdays excepted). The maximum time on any subject does not exceed 1½ hours daily, distributed weekly approximately as follows: literary instruction 9 hours, scientific instruction 9 hours, modern languages 3 hours, drawing 3 hours, manual work 4 hours, music 1 hour.

Gymnastic and military exercises are carried on outside of the regular class hours.

In the 4th and higher years the time devoted to manual work and vocational instruction is increased; but at least 10 hours are reserved every week for the other subjects of instruction.

The instruction in the Supplementary Courses aims to revise and supplement the subjects taught in the higher course of the Primary Schools. Teachers are authorized to select from the programmes of the Higher Primary Schools, and especially those of the 1st year, whatever they may consider to be of special utility for the pupils attending the Supplementary Course.

A Welfare Committee has been established in every Higher Primary school which watches the material interests of the pupils and the school property, takes the pupils under its protection, obtains situations for those who merit it on completing their studies, and takes especial care of the scholarship holders.

SECTION 4: PRIMARY TECHNICAL INSTRUCTION.

The State organization of primary technical instruction in France dates from 1878, when the display of French Industry at the Paris Exhibition in that year was held to be unsatisfactory, and the matter was discussed in the Chamber of Deputies, leading manufacturers and Chambers of Commerce having directed the attention of the Government to the question. Propositions leading to the creation of an independent system of primary technical instruction were submitted, but rejected, and it was finally agreed that it should be annexed to the existing Primary Schools. As a result, the law of December 11, 1880, was passed providing for Schools of Manual Apprenticeship, these to be assimilated, as regards support and regulations, to the Higher Primary Schools having a distinctly technical character.

In the same year the Legislature authorized the creation of another order of schools, called National Professional (Vocational) Schools, which were intended to illustrate the kind of primary education that might replace in society the decaying apprenticeship system by an effort beginning with the infant school and following the child to the adolescent period, giving, at each stage, "technical instruction which, commencing from the earliest age, when it is of little importance, continues up to the very end of the course, when it becomes of the first moment. When he has arrived at this final stage the apprentice, who now only needs the practice of his trade to become a workman, leaves the National School and goes either into a workshop or into a technical school in the proper sense of the term." It was believed that such schools would

"lead a youth to the threshold of the factory or the engineering school, armed not alone with general and with special knowledge, but with the aptitudes and habits of work which would enable him after a few months of practice in a particular calling to become a finished workman."

Three schools of this character were established in 1886-87, and liberally supported by the State.

Primary Training Strictly Vocational.

Primary technical training in France is distinctly vocational, is carried out with marvellous system and thoroughness, and everywhere it tends to specialization. The endeavour has been made at times to engraft the training upon the general system of primary education—an endeavour which would appear to be comparatively easy in France, where primary education is Pestalozzian in spirit and method and where the Higher Primary Schools all give more or less technical instruction.

At other times the endeavour has been made to emphasize general instruction in schools of the technical type. This was notably the case in the Ecole de la Martiniere, the most famous of the primary technical schools of Lyons, which was established in 1830 by private initiative and is managed under a trust deed by trustees acting conjointly with the Minister of Commerce. The purpose of the school was "to give a sound, practical training to those who are to enter industrial or commercial life at a comparatively early age." For more than half a century it was educative in the general sense, preparing boys for industrial life, but not training them for the exercise of any particular calling. This policy was modified in 1895 by providing for technical specialties in the third year of the course. By this action, says an English authority, "the most important stronghold of a system of generalization in French primary technical instruction may be said to have fallen."

Although primary technical instruction in France arose from conditions of life and industry peculiar to that country, yet in purpose and methods it is a type of what vocational schools incline to be everywhere.

Technical Instruction Defined.

At the Universal Exhibition held in Paris in 1889 the most notable of the series of Congresses accessory thereto was one which discussed technical education and decided that "technical instruction in its broadest sense has for its object the study of the arts and sciences, in view of their application to a definite trade or profession. The training must be as varied as the trades and professions, its degrees being determined in each case by the end in view." It was decided that the term "technical instruction," without a modifying word, should be held to include both industrial and commercial training.

The Congress defined Primary Technical Instruction in France as that given in Schools of Manual Apprenticeship and in the Higher Primary Schools (that is, schools for pupils over 12 years old); Secondary Technical as instruction given in the Schools of Arts and Trades; Higher Technical as that

given in the Central School of Arts and Manufactures, and institutions of the same high order. This classification agreed in the main with the conditions under which technical instruction was carried on in France at that time.

Specialization was definitely adopted as the government policy by the law of 1892, which placed the Practical Schools of Commerce and Industry under the sole charge of the Minister of Commerce and Industry, thus removing them entirely from the system of general primary instruction. At that time a Department of Technical Instruction was created in the Ministry named, and appropriations covering salaries and many other expenses were offered through this Ministry for schools giving instruction in commerce and industry to pupils from the Primary Schools. Subsequently the National Vocational Schools were transferred to the same Ministry.

Intensive Specialization Approved.

In respect to the present policy it may be said that the principle of intensive specialization is generally approved by French authorities; but as regards the age at which specialization should be encouraged there is a conflict of opinion. The policy of the separate and not always harmonious administrations of the two types of primary education, general and special, by the different Ministries under whose care they are, prevents placid stagnation. This conflict increases as the need of professionally trained teachers for the Primary Technical Schools becomes more and more evident. Temporary provision has been made for meeting this necessity by the institution of Normal sections in several of the Higher Technical Schools; but this action threatens to introduce social distinctions among the laboring classes of France at the very time when an effort is being made to break down the long-standing distinctions between the lower and upper classes of society. On these two phases of the general problem of primary technical education—early specialization and dual administration of the two types of primary education—finality of judgment does not appear to have been reached.

SECTION 5: SCHOOLS FOR TEACHERS.

Primary Normal Schools.

These train male and female teachers for the Primary Schools, private schools and Kindergartens. When the great primary education laws were passed, each Department had to have Normal Schools for male and female teachers separately, and these were established wherever they had been lacking, except that the Department of Constantine has no schools for girls, and that of Oran none for boys. The number of masters to be trained having diminished considerably, and it being costly to maintain two Normal Schools with but few pupils and a large number of professors, some Departments grouped themselves into pairs and shared in the expense of these two schools.

Pupils are admitted by competitive examination held yearly in each Department. With the application for enrolment, the candidate must furnish a list of the schools he has attended since 12 years of age; his birth certificate, proving his age to be at least 16 and not over 18 on October 1st; primary certificate, and an undertaking to serve for ten years in the public teaching profession. Candidates must be free from all infirmities or ailments which would unfit them for teaching.

Age exemptions, not to exceed six months, may be granted by the principal. Candidates who do not hold a primary certificate may be enrolled temporarily, their admission taking effect only if they obtain it at the October session. No one may enter for the examination more than twice unless specially authorized by the principal.

EXAMINATIONS FOR ADMISSION.

The competition comprises two series of examinations, the first for selection of those eligible, the second for definite admission. The first comprises:

(1) Dictation of about twenty lines, followed by not more than 5 questions on the text, explanation of the meaning of a word, expression or phrase, analysis of one or more words, etc.

(2) Writing examination—one line each in large slanting, large round, and running style; 2 long lines; 2 medium and 4 fine; the value of the writing handed in at the orthographic composition being also taken into account.

(3) French composition, consisting of a story or letter of a simple nature, the explanation of a moral or educational precept, proverb, maxim, or question in moral and civic education.

(4) Arithmetic, comprising, in addition to the solution of one or two problems, the explanation of a rule, with reasons.

(5) Drawing, consisting of an exercise in simple sight drawing.

Examinations of the second series comprise questions on the French language, arithmetic and the metric system, history and geography of France, and on rudiments of physical and natural sciences; a summary of 2 lessons given by professors of the school, both on literary and scientific subjects; examinations in the elements of singing and music; gymnastic exercises; military exercises for male candidates, and sewing for female candidates.

After the competition a list of pupils definitely admitted is prepared for each school, with a supplementary list in order of merit like the first, from which the director fills vacancies as they arise, and which also serves to furnish neighboring academies with pupils when their numbers are incomplete.

Students at Normal Schools are called pupil-teachers. All have uniforms which they wear for holidays and outings.

COURSE OF INSTRUCTION.

The course of instruction occupies 3 years and comprises the following subjects:—

For both sexes:—psychology and ethics; pedagogics and school management, French language and elements of French literature, civic history and education,

geography, arithmetic and bookkeeping, physics, chemistry and natural sciences, modern languages, writing. drawing, singing and music, and gymnastics.

For young men:—geometry, surveying and leveling, agriculture and horticulture, agricultural and manual work, and military exercises. Since 1909, three lectures on the army and military service are given by officers.

For young women:—domestic economy, sewing, cooking, washing and ironing, and gardening. (In the schools at d'Alençon, Arras, Caen, Chambéry and LePuy, vocational instruction in hand-made lace has been organised.)

The general course of instruction is given during the first and second years, the practical and vocational in the third. Courses bearing on educational subjects which require the greatest amount of intellectual effort are held in the forenoon, the afternoon being reserved for manual work, drawing, singing, etc. During the third year pupil-teachers receive at least two months' practical instruction at the Primary School annexed to the Normal School, and each week in turn they give a lecture before the director and professors.

All pupils are required to undergo the examinations for the superior certificate at the end of the second year. At the end of the third year they must present themselves for final examination on normal studies, comprising a written exercise on a question in pedagogics, a lesson given to the pupils of the annexed school or the practice school, questions on the organization of a class, on school programmes, methods, etc. This final examination was introduced by the decree of August 4, 1905, which modified the form of education at the Normal Schools in a practical and professional sense. This decree has been applied in its entirety only since 1907.

Pupils who leave the school after three years of study are entitled, according to their capacity, to the first vacancies occurring in the Department.

Fourth year scholarships may be granted to those pupils who are preparing for the Higher Normal Schools.

Higher Normal Schools.

The Higher Primary Normal Schools (at St. Cloud for boys and at Fontenay-aux-Roses for girls) prepare students for teaching in the Normal Schools and Higher Primary Schools. The Higher Normal School (at Paris) furnishes professors for the secondary teaching of boys. The Normal School at Sèvres is the nursery for the secondary education of girls.

All the above Normal Schools prepare their pupils for a professional examination, at which they may obtain the necessary diploma for teaching. These Normal Schools are not exclusive, and the same examinations may be undertaken by all persons who fulfil the required conditions as to age, previous grades, etc. The pupils are boarders, supported and instructed free of charge, and have only to furnish their outfit. A certain number of day-scholars are also received. The pupils bind themselves to devote ten years to public instruction. Those who give up teaching before the expiration of this ten-year period must refund the State the sums expended for their support at the Normal School.

SECTION 6: SECONDARY INSTRUCTION.

Less has been done for secondary instruction than for primary education. A large number of new and spacious buildings have been erected here and there for the lyceums, complying with the requirements of health and well-being. The organization of the instruction of boys has adjusted the courses to meet present-day requirements. Later efforts have been directed principally to the organization and extension of the secondary instruction of girls.

Secondary Schools.

The Lyceums are the typical Secondary Schools, and are established and maintained by the State. The local or communal Colleges are established by local authorities, the State contributing to their maintenance. Although the Colleges follow the same official programmes as the Lyceums, few of them offer the full secondary course of instruction, and hence form a sort of lower order of Secondary Schools, or a preparatory stage to the upper section of the lyceums. The modern courses of instruction in the colleges are co-ordinated. This movement is fostered by Government bursaries open to competition, enabling promising youths whose parents cannot afford the expense of college education to meet the tuition fees and cost of living. The Secondary Schools are not free schools, and this fact has determined their social distinction; hence the gradual co-ordination of primary and secondary systems is significant for social as well as educational reasons.

The Secondary Schools comprise the whole scheme of liberal education up to specialized University faculties and higher special schools such as the Polytechnic, the National Conservatory of Arts and Trades, etc. The University faculties of Science, with their recent equipment and laboratories and technical institutes, are attracting young men destined to become directors of large industrial enterprises, while the faculties of Letters are becoming the resort of students interested in the economic and social reorganizations of the time, and also of young men and women preparing to be school inspectors and professors at Normal Schools.

Attendance and Grants.

The increased attendance at Higher Primary Schools and Practical Schools of Commerce and Industry accounts partly for the decline in the total enrolment in Secondary Schools for boys as between 187,402 in 1901 and 161,388 in 1909—the whole of this decline of 26,000, with the exception of 8,000, being in private schools. The State Lyceums and Colleges increased during that period from 88,202 to 96,830.

The total appropriations by the Government for the maintenance of Secondary Schools for Boys in 1909 was $4,157,900 . In the five years (1906–10) the total increase in the appropriations for Secondary Schools for Boys was $557,110, which was used chiefly for increases in salaries of professors and assistants.

Public Secondary Schools for Girls are administered separately and are under different regulations as regards programmes and standards. The total enrolment of girls in 1908 in public secondary institutions was 34,671. The appropriation for these institutions in 1909 was $671,115.

The total amount allowed by the State for Secondary Schools for both boys and girls, including the additional appropriation applicable to both, or else intended for special purposes, was $5,993,235. The State appropriation for current expenses of Universities in 1909 was $2,897,888. The Higher Normal School, which has been consolidated with the University of Paris, received a separate appropriation in that year of $53,720.

SECTION 7: HIGHER EDUCATION.

The greatest progress has been made in the domain of Higher Education. Everywhere faculties were poor and in a most wretchedly neglected condition; the sciences and medicine especially lacked laboratories for study and research. The equipment, particularly at Paris, was in such a deplorable state that in 1873 Mr. Jules Simon, then Minister of Public Instruction, acknowledged before the learned societies that he did not venture to show to foreign visitors either the Sorbonne (University) or the School of Medicine, because they made him so ashamed of France. Transformations have been wrought since that time, and many edifices constructed. They are all roomy and abundantly equipped with up-to-date apparatus in all branches. About 84,000,000 francs have been devoted to the improvement of Higher Education, and it is estimated that a further sum of one half this amount will be required to complete its equipment.

In 1876 there were 625 professorships of higher instruction; now there are over 1,200. The number of students in 1875 was 9,963; now there are 40,767.

CHAPTER XXXI: ELEMENTARY TECHNICAL INSTRUCTION.

Provision is made for instruction and training in three types or kinds of schools.—

1. National Vocational Schools coming under the law of 1880. (Schools of Manual Apprenticeship);

2. Practical Schools of Commerce and Industry;

3. Free (Private) Schools of Technical Instruction, not classified under the preceding categories.

SECTION 1: NATIONAL VOCATIONAL SCHOOLS OR SCHOOLS OF MANUAL APPRENTICESHIP.

The law of December 11, 1880, conferred the name "Schools of Manual Apprenticeship" on the public or private schools which were founded with a view to developing the necessary dexterity and technical knowledge among young persons who intend to enter manual trades.

It places these schools on a similar basis to the Supplementary Courses, the Higher Primary Schools, and the private schools, both primary and vocational.

The promoters of this law were prompted by the well founded statement that in France the economic value of workmen in almost all the trade bodies had a downward tendency. This regrettable state of affairs, which might have been productive of the most serious consequences to the national industries, was due in great part to the fact that apprenticeship had practically ceased to exist in France.

Efforts were made to remedy this state of affairs by promoting in industrial centres the establishment, for each branch of industry, of special vocational schools that might replace and even improve upon the old-time apprenticeship system. The usefulness of such establishments was no longer in doubt, and many manufacturing towns, recognizing this fact, had taken a praiseworthy initiative in this direction.

The State on its part founded on July 9, 1886, at Vierzon (Cher) a "National School of Higher Primary Education and of Vocational Instruction Preparatory to Apprenticeship." This was intended to serve as a model for institutions of the same kind to be founded under the law of 1880. The following year the National Schools of d'Armentieres (Nord) and Voiron (Isere) were founded upon the same model. Finally, in 1898, the State bought the Livet institution at Nantes, in order to turn it into a fourth National Vocational School.

NEW TYPES OF SCHOOLS.

At the outset, under the law of 1880, the vocational public schools were dependent for their general instruction on the Department of Public Instruction, and for the technical instruction on the Department of Commerce and Industry. A special provision was inserted into the finance bill of 1882 modifying this, and deciding that Higher Primary Schools whose teaching is mainly industrial or commercial should be placed under the exclusive control of the Minister of Commerce. These schools received the name of "Practical Schools of Commerce and Industry."

In order to classify the vocational schools, a commission composed of representatives of the two Ministries received instructions to arrange a basis for legislation as to their position. There has been a tendency, which appears to be productive of good results, for the number of vocational schools coming under the jurisdiction of the Department of Commerce to increase from year to year, and only a few schools now remain subject to the law of 1880.

As they were at first placed under the provisions of this law, it seemed as if, from the nature of their teaching, the National Professional (Vocational) Schools should come under the category provided for by the law of 1892. But the opposition of the higher officials of the Department of Public Instruction had first to be overcome, and it was only in 1900 (by the budget of April 13) that the credits for the maintenance of these schools were transferred from the budget of Public Instruction to that of Commerce and Industry.

ATTITUDE OF GOVERNMENT.

The 25th anniversary of the National Professional (Vocational) School at Vierzon was celebrated at the time of the visit of a section of our Commission, and the following extract from an address on that occasion by Mr. Coubya, Minister of Commerce and Industry, will give a good idea of the attitude of the Government:—

In a country like ours, where the distinctive feature of production is taste and elegance, it is indispensable to have good artisans. Hence it is necessary that from adolescence onwards our future workers shall receive a training which will enable them to maintain and extend the renown of French industry.

Does it not also serve the interests of the worker himself to put him in the way of improving his social position by the skilful practice of his trade? Hitherto only the elite have been able to benefit by the advantages of technical education, which must be extended more and more to the requirements of the most varying trades and districts. The Minister of Commerce purposes, with the concurrence of the Government, to direct it in this decentralizing spirit, whilst subordinating it to the higher principle of the unity of national education.

This great problem is occupying the attention of the Minister of Public Instruction and the Minister of Commerce, and they are co-operating in its solution.

Whilst it is the duty of the Minister of Public Instruction to see that those children of the people who show special aptitude for theoretical studies should be afforded the opportunity of the highest grade of secondary and higher education, the Minister of Commerce must see especially to those children who show aptitude for practical work. For these, the supplementary courses and practical and professional schools will give instruction in the synthesis of the subjects learnt at the common school, and put into their hands that indispensable tool, a trade, one of those beautiful and simple French trades which, in their ingenious technique, are as noble as a profession, and which, elevated by the perfecting of science and art, will be in the future, as in the past, the pride of our artisans and the enrichment of our country.

Practical Aim of Courses.

The school at Vierzon was opened in 1886; those at Voiron and Armentieres in 1887; and that at Nantes (Livet school) in 1898.

These schools aim to turn out educated workmen, qualified to become overseers and especially foremen. They also prepare students for the examination for admission into the Schools of Arts and Trades and for other technical schools. For instance, the school at Voiron prepares some students for the Central School at Lyons.

The instruction is free, but in addition to day scholars each school receives full boarders and day boarders.

The usual course of study is four years, but only three for those who intend to enter other technical schools.

The instruction is theoretical and practical. The former comprises moral and civic instruction, writing, French, history, geography, elements of hygiene, arithmetic, algebra, geometry, trigonometry, accounting, general and industrial chemistry, mechanics, technology, ornamental drawing, and geometrical industrial drawing. Foreign languages are optional. Practical instruction comprises iron and woodworking, with special instruction adapted to local industries; at Vierzon iron and ceramic industries; at Voiron weaving, linen and silk industries; at Armentieres iron, molding, and weaving. Free students may be admitted to the courses in professional weaving at these two latter schools, which possess experimental laboratories for textiles available for the public.

A preparatory section was established in 1906 at the school at Voiron; entrance by competitive examination. Since 1908 this school has possessed an experimental laboratory and special workshops for electrotechnics.

The school at Nantes, now installed in old buildings, will soon take possession of premises expropriated from the grand seminary.

Councils and Committees.

At each National School there are: (1) a governing council which regulates all questions relating to welfare of pupils, satisfies itself by monthly visits that the establishment is well kept, and makes suggestions to the Minister as to any improvements to be made; (2) a welfare committee, composed of leading men of the locality chosen from among manufacturers or merchants, which helps to find positions for the most deserving pupils on completion of their studies, and takes particular care of the holders of scholarships; also investigates methods of bringing the instruction into harmony with the requirements of the various industries of the locality; (3) a council of professors, presided over by the director of the institution, which attends to classifying the pupils, enrolling names on the roll of honor, and admitting pupils into the higher division; proposes additions or exclusions when occasion requires; draws up (in order of merit) a list of candidates for State scholarships; gives advice about prolongations, promotions and suspensions; and in case of serious misconduct of pupils sits as a disciplinary council and suggests penalties.

Entrance Examination.

Admission into these schools is by competition. Candidates must be French citizens, at least 12 and not over 15 years of age on October 1st of that year; and must be enrolled at the prefecture of their Department before July 10th. No exception is made as to age. Candidates must furnish certificate of birth, medical certificate that they have no disease, especially of a scrofulous or contagious nature, and that they can safely devote themselves to manual work; certificate of revaccination; statement of their conduct marks and work during the previous academic year; and a note showing the school which they wish to attend.

The examinations, which are identical for the whole of France, are held in July on the same days and at the same hours, in the chief towns of the Departments and at the headquarters of each school. They consist of written compositions only, e. g.; (1) dictation of 15 lines, followed by some questions in grammar; (2) French composition on a simple subject; (3) a page of writing; (4) an arithmetical problem within the limits of the program of the higher course of the elementary primary schools; (5) questions on the history of France since 1610, and on geography.

The examinations are marked from 0 to 20, and candidates must obtain at least 2/5 of the maximum in order to appear on the list from which nominations are made until the available vacancies are filled.

The number of pupils admitted in 1908 was as follows:

Schools.	Full Boarders.	Day Scholars.	Total.
Armentieres.....	82	15	97
Nantes.....	50	43	93
Vierzon.....	80	25	105
Voiron.....	75	17	92

Studies, Examinations and Final Diploma.

The studies are divided between theoretical instruction and shop work. The manual work is limited to 3 hours daily in the first year, 4 in the second, and 5 in the third and fourth.

Parents receive at the end of each month a statement of marks for the courses and practical work, and also a quarterly bulletin.

Classification of students in each division and on the roll of honor takes place quarterly. The final classification is made at the end of the year according to the promotion examinations, and pupils may be admitted to higher division, or compelled to remain two years in the same class, or may be excluded.

Admission in 3rd year to the special section, preparatory to the National Schools of Arts and Trades and other technical schools of the same grade, requires an average of 10 marks for drawing and shop work, no individual mark being less than 6.

Towards the end of the third year a certificate of fitness to receive the certificate of practical industrial studies is given to those pupils who, after a special examination, are preparing for the competition for admission to the Schools of Arts and Trades.

Final examinations for 4th year pupils, held at each school before a special commission, bear on all subjects of the program. Written examinations consist of a French composition, one paper each in mathematics, mechanics, physics, chemistry; oral examinations comprise mathematics, mechanics, physical sciences, the questions being drawn by lot, and fifteen minutes preparation allowed for each. The professional examination consists of drawing, technology and manual work.

Those pupils are admitted who have obtained at the examinations a general average equal to at least 11 out of 20, no individual average being less than 6; but for drawing and manual work the average must not be less than 10. A diploma is granted by the Minister to those pupils who have passed the final examinations. Within two years after leaving school those who failed to obtain the diploma may be admitted to another examination for diplomas.

In 1908 diplomas were granted as follows: Armentieres 36, Nantes 19, Vierzon 24, Voiron 16.

Fees, Scholarships, Expenses,

The price of board in these schools is fixed as follows: (figures denote francs, the first being for full boarders, the second for half boarders):—1st year, 500,250; 2nd year, 550,275; 3rd and 4th years, normal section, 550,275; 3rd and 4th years, special sections, 600,300. Reduction is made from above rates of 1|8th for two students from same family, and 1|6th for three.

Complete outfit to the value of 200 francs must be supplied when the pupil enters, and renewed by the family, cost of renewal for the 2nd and 3rd years being estimated at 50 francs a year. In exceptional cases the Minister may grant reductions in the cost of the outfit.

The school fee at Armentieres, for lectures in weaving, is 200 francs a year. but on request, young persons in poor circumstances may be excused all fees other than those for academic supplies, estimated at 25 francs.

A certain number of full or partial scholarships, maintained by the State, are conferred every year on enrolled candidates, after the entrance examination in the first half of the list; others are reserved for pupils who have finished their first or their second year studies, and the position of whose families justifies assistance from the State. Applications must be accompanied by the tax papers of the petitioner, as well as a statement of information certified by the mayor as being honest and correct, showing the resources and expenses of the family. Scholarships are granted after consultation with the council of professors. Every scholarship pupil who at the end of the school year falls below the first half of his division loses the benefits of his scholarship.

Various Departments maintain scholarships in the National Vocational Schools, which they confer on candidates who have passed satisfactory examinations but have been unable to win national scholarships.

SECTION 2: PRACTICAL SCHOOLS OF COMMERCE AND INDUSTRY.

The essential object of these schools is to train recruits for industrial and commercial undertakings, and is the same as that of National Vocational Schools. They fit young persons for commercial pursuits or industries, enabling them in a short time to become overseers or foremen of workshops, and also prepare students for the entrance examinations of the Schools of Art and Trades; but they are not to sacrifice their apprenticeship properly so called.

The instruction is free. Pupils cannot be admitted before the full age of 12. Those under 13 must produce certificate of primary studies or prove compliance with the requirements of the school by passing an entrance examination. When candidates outnumber vacancies, admission is by competition.

How Established and Managed.

The following is a summary of the law of 1893:—

These schools may be established by a Department or Commune, or combination of both. A general or municipal council wishing to establish such a school must prepare a special estimate of expense of opening and maintaining it, at the charge of the Department or Commune, and the available resources, and must undertake to support it for 5 years, in accordance with the law of 1889. The establishment of the school must be approved by the Minister of Commerce and Industry, to whom plans in detail of its construction, equipment and furnishing must be submitted, and he may grant funds up to one-fourth of total cost.

The staff shall comprise a director not under 25 years of age, and an adequate number of assistants and practical instructors not under 21. All must be French and hold certificates recognized by the Ministry for their respective positions. All appointments are made by the Minister, assisted by an Advisory Board from a list of 3 persons submitted by the Mayor of the Commune or Prefect of the Department, as the case may be.

There shall be a certain number of Superintendents of Apprenticeship on the staff, as required, these being appointed by the Prefect or the Mayor, and their salary fixed by the municipal or departmental council, in consultation with the director. These teachers are not entitled to pensions, except under specified conditions.

The Staff is divided into 4 classes:—directors or directresses, receiving from 2,500 to 4,000 francs; professors, practical instructors and workshop-superintendents, receiving from 1,500 to 3,000 francs; and assistants (male and female) from 1,200 to 2,400 francs per annum, together with lodging allowance according to the local conditions.

Expenses of maintenance are borne by the State, the Departments, or the Communes, according to the law of 1889. The Ministry of Commerce

and Industry may make grants to Departments or Communes, as prescribed, for the purchase and maintenance of equipment, furniture and appliances.

Scholarships to cover boarding are awarded by the Ministry on competitive examination. The course includes (1) commercial and industrial training, both theoretical and practical; (2) supplementary primary education. Proportion of time allotted to each is decided according to local requirements, the time-table being fixed by the Council of Improvement of each school. If the school has both industrial and commercial sections a special program must be drawn up for each in subjects peculiar to that section, and for the two sections together in common subjects. Certificates are awarded on graduation.

Councils of Improvement.

Each school has a Council of Improvement, consisting of the Prefect or Mayor; the Inspector of Commercial or Industrial Education (or both if the school has both sections); 4 members nominated by the general (departmental) or municipal council, at least two of whom must be or must have been engaged in industry or commerce; and one member appointed by the Ministry of Commerce (or two in the case of two sections). In the latter case the two members must be or must have been engaged in commerce and in industry respectively. In the case of Girls' Schools, two of the four nominated members must be women.

The Director or Directress attends all meetings of the Council, except when the annual report is being discussed.

The Council's duties are to give advice on expenditure, visit the school at least once a month to see that everything is in order, attend the graduation exercises, and compose the annual report to be submitted to the Minister through the Prefect.

In the case of municipal schools, mayors are instructed to interest themselves in placing pupils, especially scholarship holders, on leaving school, and to give advice on matters submitted to them by the Minister or Prefect.

Such schools are inspected by the Inspector-General of Technical Instruction, the Departmental Inspector of commercial or industrial education, or by the Departmental Inspectress.

The entrance requirement for *Normal Sections* comprises mathematics and geometry, French literature, French history, geography, and one foreign language. In the *Industrial Section*, drawing and manual training are required.

School Programs for the Sections.

The teaching programs in these schools are very extensive documents which can scarcely be summarized, hence only the subjects taught and time allotted to each will be mentioned. These typical programs are not compulsory but are only intended to guide controlling boards in the preparation of the special programs at each school, which should be adapted to the needs of local trades and industries.

Commercial Section (Boys).

	Class Hours Per Week.		
	1st year.	2nd year.	3rd year.
Ethics	½	½	½
History	1	1	..
Hygiene	..	..	1*
Drawing	1	2	..
French	6	3	2†
Physics and Chemistry	3	1½	..
Arithmetic and Algebra and Calculation	3	3	..
Commercial Legislation	..	1	1
Elements of Commercial Economy	..	..	1
Geography	1	1	3
Merchandise	1½	3	3
Accounting and Commerce	6	3	3
Practical Exercises (Monography and Commercial Office Work)	..	6	6
Penmanship and Typewriting	3	2	2
English or German	6	6	6
Another language	3	3	3
Supplementary Professional Instruction for the pupils' future calling or for the commercial needs of the locality	..	..	5½
Inspected Studies	9	9	9

*During the last three months.

†During the last three months one hour of French is replaced by one hour of hygiene.

This time table was made up by taking as a basis the one-hour class, except as regards the teaching of Physics, Chemistry and Industrial Electricity, which may necessitate experiments of a certain duration and for which the one and a half hour class has been arranged.

The Workshop or Drawing sessions are of at least 2 hours' duration.

Commercial Section (Girls.)

	Class Hours Per Week.		
	1st year.	2nd year.	3rd year.
I. Commercial Instruction:			
Commerce, Accounting and Bookkeeping	4½	4½	4½
Foreign Language	4½	4½	4½
Arithmetic and Algebra	3	3	3
Geography	1½	3	3
Writing and Penmanship	3	1½	1½
Chemistry and Merchandise	..	1½	1½
Legislation	..	..	3
Commercial Economy	..	..	1½
Total hours	16½	18	22½
II. General Instruction:			
Ethics	..	1½	1½
French Language	4½	3	3
Drawing	1½	1½	1½
History	1½	1½	1½
Natural History and Hygiene	..	1½	..
Geometry	..	1½	1½
Rudiments of Physics	1½	..	..
Domestic Economy	..	..	1½
Plain Sewing and Cutting out	3	3	3
Total hours	12	13½	13½
III. Studies	4½	4½	3
Grand totals	33	36	39

INDUSTRIAL SECTION (Boys).

Class Hours Per Week.

	1st year.	2nd year.	3rd year. 1st period.	3rd year. 3 last months.
Ethics	½	½	½	..
French	3	2	1	..
History and Geography	2	1	..	..
Rudiments of Industrial Economy and legislation for the working classes	..	..	1	..
Arithmetic and Algebraic Calculus	3	2	..	..
Geometry	3	2	..	..
Physics and Chemistry	3	1½	..	..
Rudiments of Mechanics	..	..	2	..
Rudiments of Industrial Electricity	..	..	1½	..
Supplementary theoretical instruction applied according to the trades	..	..	2	3
Drawings and descriptive rudiments	6	7	7	7
Practical work	20	23½	28½	38
Technology	1½	1½	1½	
Supervised studies	6	6	6	2
Total hours	48	48	51	51

This table was prepared by taking as a basis the one-hour class except as regards the teaching of physics, chemistry and mechanics, which may necessitate experiments or manipulations of a certain duration and for which the class of one and a half hours was arranged.

INDUSTRIAL SECTION (Girls).

Class Hours Per Week.

	1st year.	2nd year.	3rd year.
I. Industrial Instruction.			
Workshops	24	27	30
Drawing	6	3	3
Total hours	30	30	33

II. General Instruction.

French Language	3	3	1½
History	1½	1½	..
Geography	1½	1½	..
Natural History and Hygiene	..	1½	1½
Domestic Economy	..	..	1½
Physics	1½	1½	..
Chemistry	..	..	1½
Arithmetic	1½	1½	..
Geometry	..	1½	1½
Accounting	..	..	1½
Ethics	..	1	1
Writing	1	..	..
Plain Sewing and Cutting out	3	1½	1½
Total hours	13	14½	11½
III. Studies.	6	6	6
Grand totals	49	50½	50½

CHAPTER XXXII: TYPICAL SCHOOLS OUTSIDE PARIS.

SECTION 1: VAUCANSON SCHOOL, GRENOBLE.

This Practical School of Commerce and Industry for Boys was visited by a section of our Commission. It is an important school, situated near the beautiful promenade of Ile Verte. Its course of study is 4 years; or 5 years for pupils in the division of industrial electricity and chemistry established in 1899.

The Preparatory Year comprises four divisions, pupils being admitted who hold the certificate of studies or have passed an equivalent examination.

The subjects of instruction are French, history, geography, writing, mathematics, physics and chemistry, natural history, linear drawing, ornamental drawing, and modern languages (9 hours a week of English, German or Italian, at choice.)

After this first year pupils are sent to one of the two following divisions according to their tastes, the occupation for which they are intended, and the wishes of parents.

The Industrial Section.

The Industrial Section prepares especially for immediate entrance into technical occupations. There is a special division to prepare pupils for the schools of arts and trades.

Subjects of instruction:—French language, history, geography, mathematics, physics and chemistry, natural history and hygiene, modern languages (English, German or Italian, at choice), industrial drawing, mechanics, industrial electricity, chemical manipulations, industrial economy, land surveying, levelling, topographic drawing, and work in the workshop.

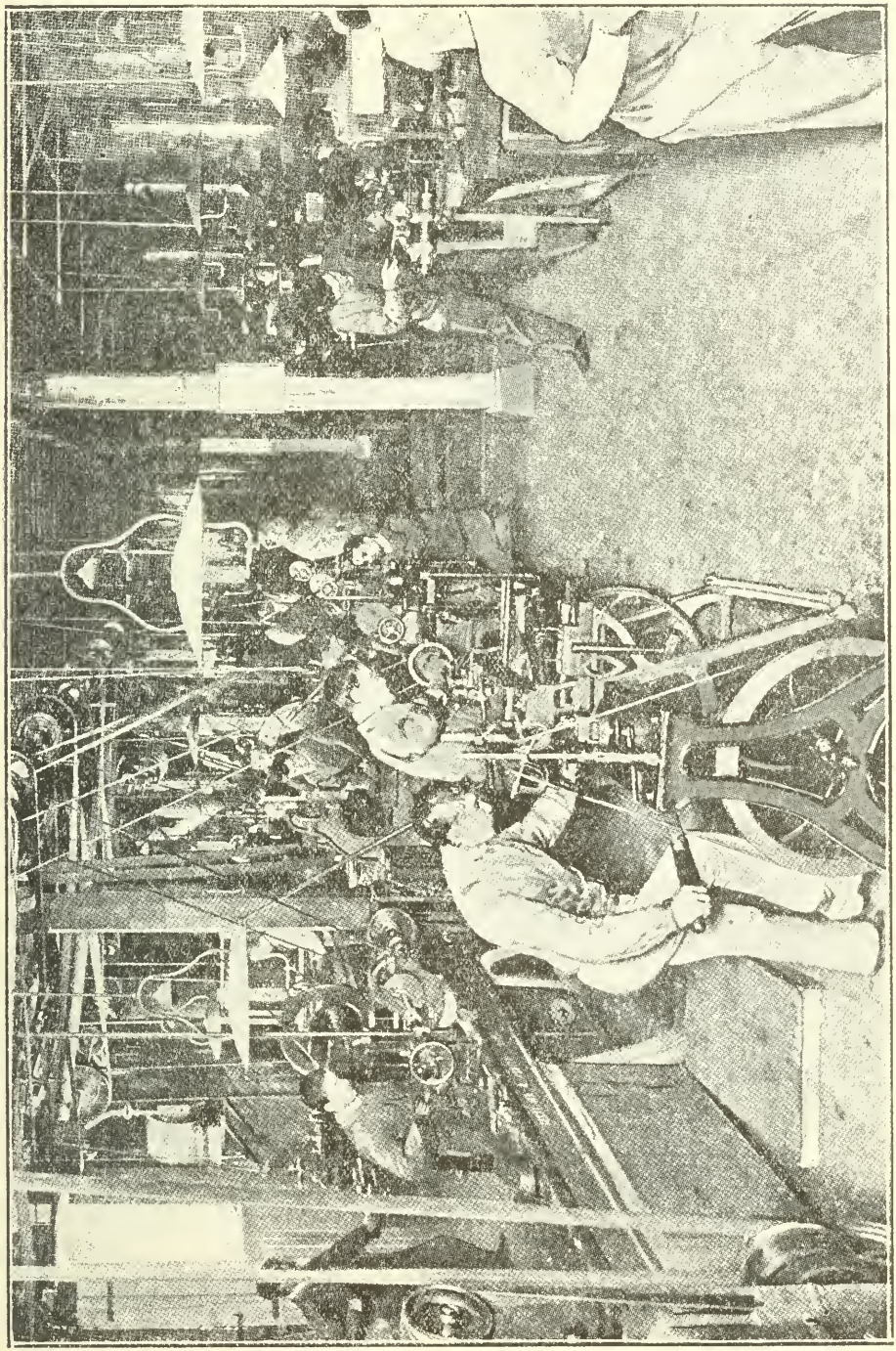
The vast workshops comprise:—forging, adjusting, metal turning, wood turning, electricity and machines.

When the pupils have acquired a sufficient general technical education they may be trained in the operation of the principal machines and motors employed in manufacturing (the steam engine, gas motor, turbine, etc). They devote themselves specially to the construction and management of electrical machines.

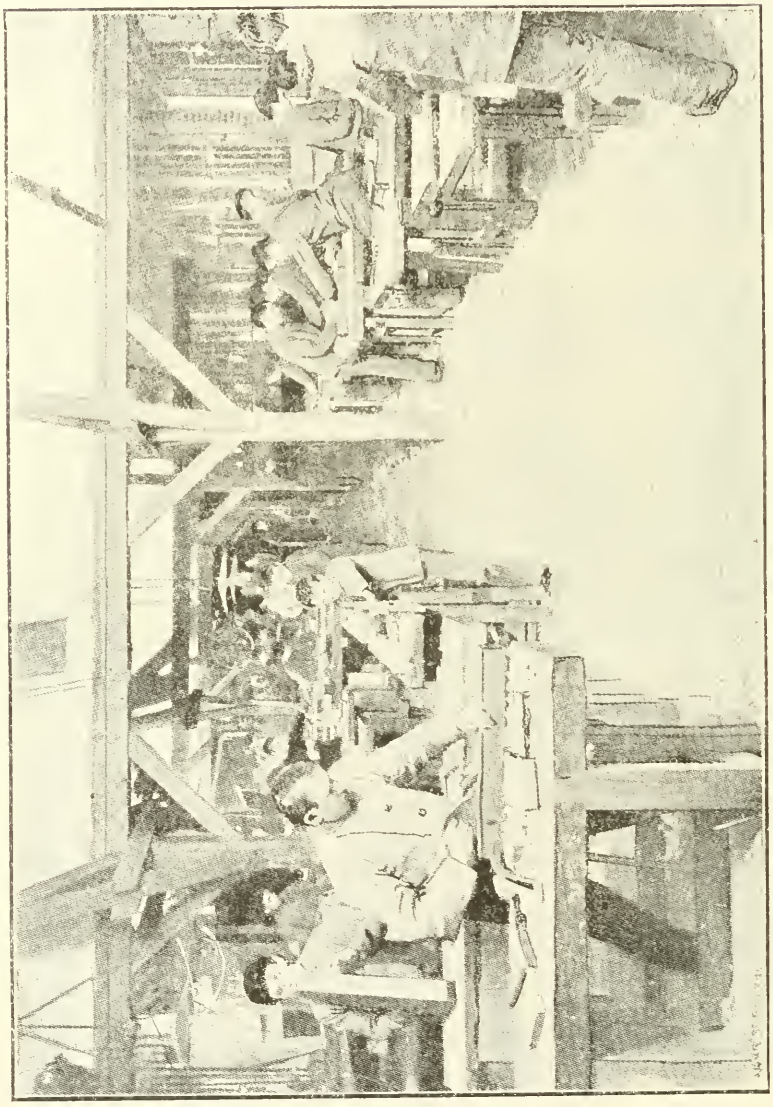
Certificate of industrial studies is awarded on completion of course.

The Commercial Section.

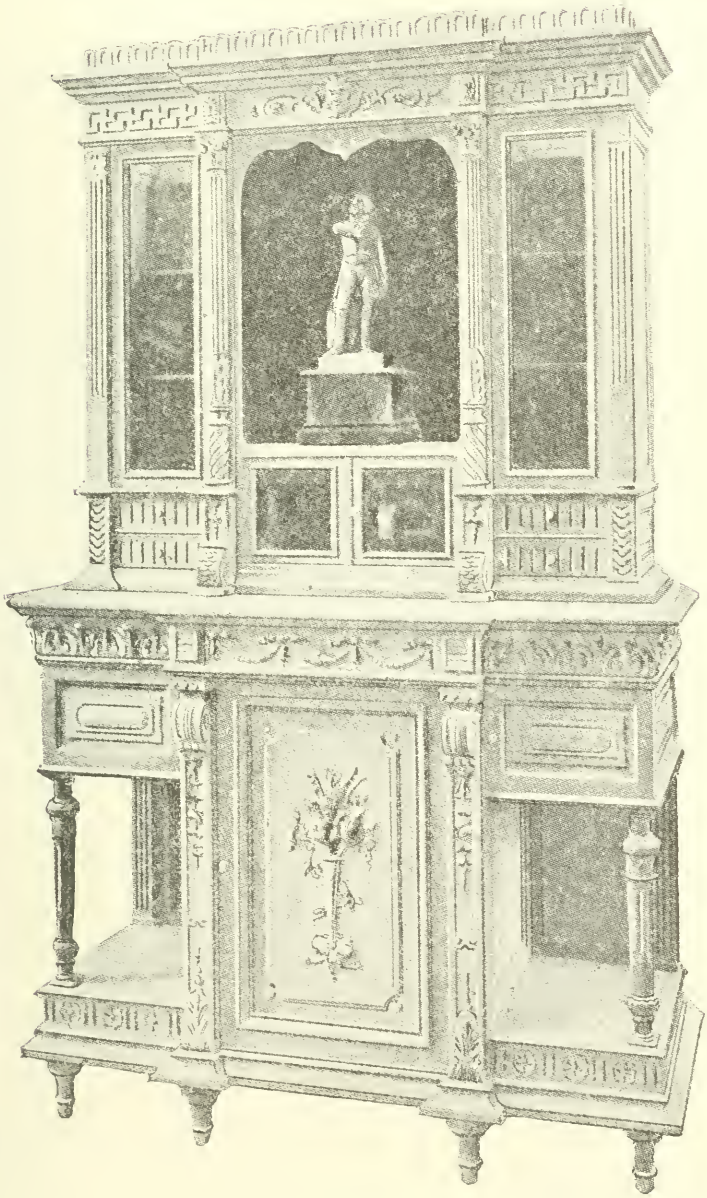
The Commercial section provides instruction in French language, history, commercial geography, legislation, commercial economy, commerce,



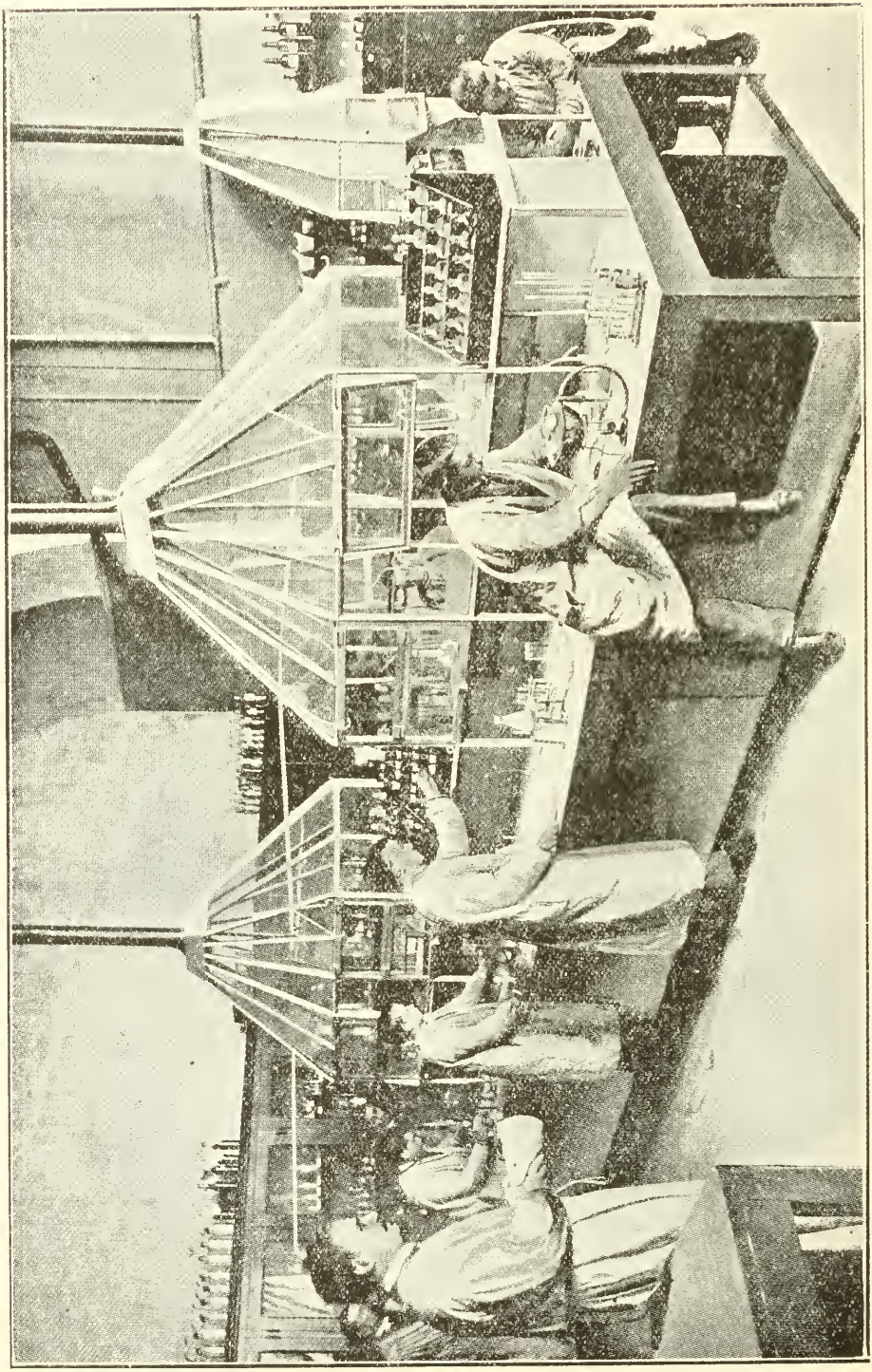
FITTERS' WORKSHOP: VAUCANSON SCHOOL, GRENOBLE.



CARPENTERS' WORKSHOP: VAUCANSON SCHOOL.



SPECIMEN OF CABINETWORK BY STUDENTS OF VAUCANSON SCHOOL.



CHEMICAL LABORATORY: VAUCANSON SCHOOL, GRENOBLE.

accounting, bookkeeping, commercial office work, penmanship, typewriting, shorthand, two modern languages, (English, German or Italian, at choice), mathematics, physics, chemistry, merchandise, natural history and hygiene, and ornamental drawing.

Certificate of commercial studies is awarded on completion of course.

The Chemistry Section.

In the Electrical and Industrial Chemistry section the instruction comprises:—(1) a course on all matters concerning the industrial production and utilization of electric energy; (2) practical work in the laboratory and workshop with reference to the ordinary electric measures, and including the handling and laying of electric current apparatus; (3) exercises in preparing plans and estimates of electric installations of all kinds; (4) visits to factories and electric installations; (5) exercises in machine management; (6) chemical manipulations and analyses. This section prepares students for the Electrotechnic Institute of Grenoble and for the Higher School of Electricity at Paris.

The Association of ex-pupils, in conjunction with the Council of Improvement, helps to find positions for pupils, and also grants scholarships to the school. The State, the Department and the City also maintain numerous scholarships. A committee of patronage grants redeemable subsidies to the best students on the completion of their studies to enable them to remain one year abroad.

Fees: with board, 580 francs; half board 290 francs.

GLOVE-MAKING SECTION.

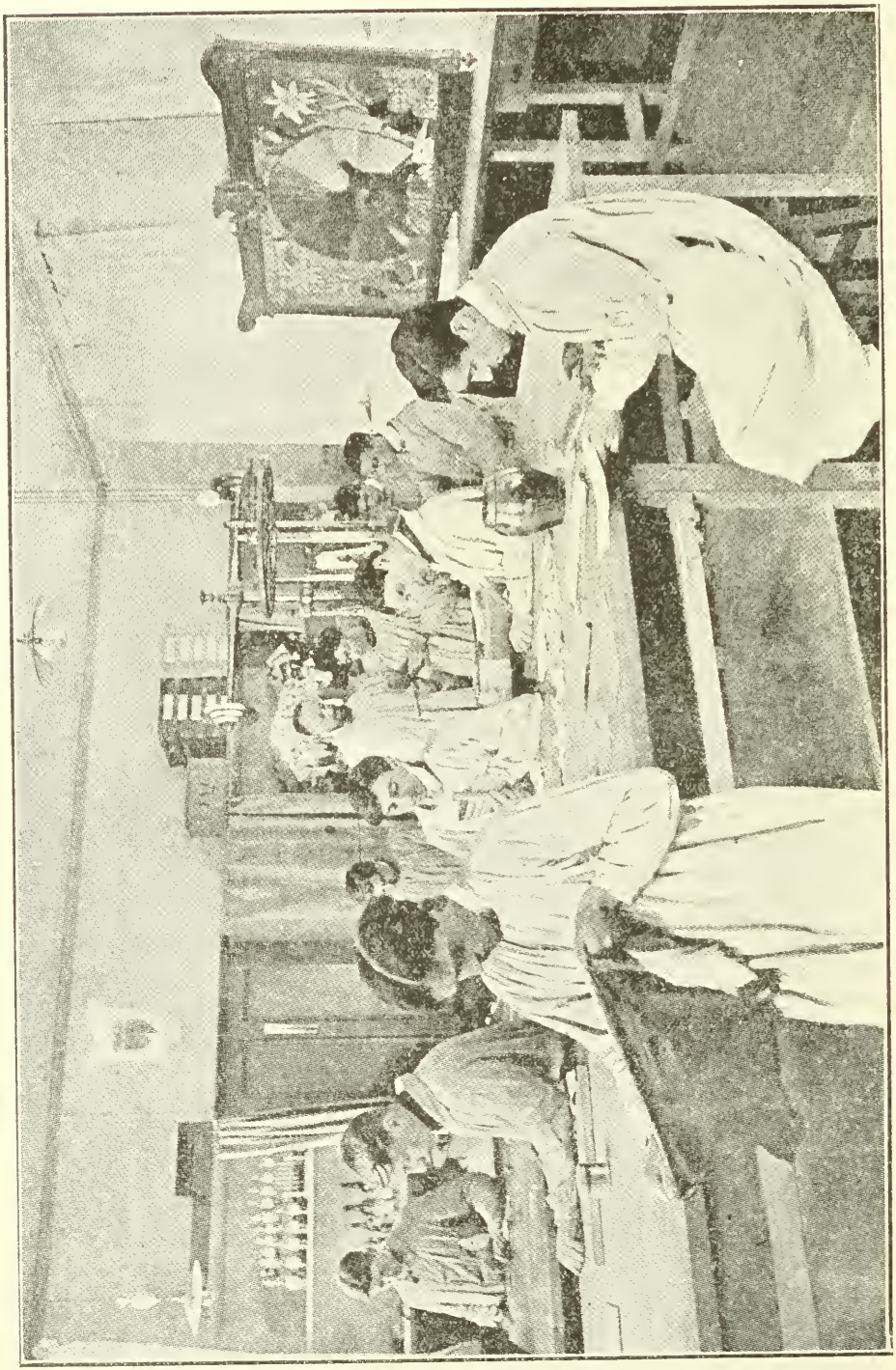
In 1910 the Syndical Board of Glove Manufacturers of Grenoble, distressed by the stationary condition of the glove industry, established a glove-making school, with the object of increasing the value of the product by raising the intellectual and practical standard of the agents of production.

The aim of this school is to discover practical means of training workers for the glove-making industry and allied trades, qualified by their general education, for the management of factories; competent to become salesmen or travellers by the development of their commercial talents; and by their knowledge of the details of their trade to be utilized in the technical part of manufacturing.

In order to accomplish this triple object the instruction must bear on general commercial and technical subjects.

The school is a manufactory which buys and sells, possessing the permanency of method of any commercial organization, and not treated merely as an accessory. From this results the circumstance that the school is in competition with the manufacturers who supply it with its necessary working funds.

This section is managed by a technical and administrative committee, composed of the mayor or his delegate; president, departmental inspector of technical commercial instruction; director of the school; president or one delegate



GLOVE-MAKING SECTION: VAUCANSON SCHOOL, GRENOBLE.

of the Syndical Board of Glove Manufacturers; one glove manufacturer and one glove workman nominated by the Prefect; and one glove manufacturer and one glove workman nominated by the Mayor.

The Course and Time Table.

The certificate of primary studies is necessary to enter the Vaucanson school. During the preparatory year, the first year, and the first quarter of the second year, the future pupils of the glove-making section must take the courses common to all young men who are aiming at commercial professions.

The course is four years, from 12 to 16 years of age, graded thus:—(1) *Preparatory year*,—predominance of general instruction; modern languages an important feature. (2) *First year*,—predominance of commercial instruction; considerable time left for general instruction. (3) *Second year*,—commercial instruction and practical technical instruction. (4) *Third year*,—predominance of practical exercises; continuation of commercial instruction.

The following is a time-table per week for each year:

General Instruction.	Preparatory year	1st Year	2nd Year 1st quarter	2nd Year 2nd and 3rd quarter	3rd Year
	hrs.	hrs.	hrs.	hrs.	
French	7	6	4½	1½	
History	1½	1	1	–	
Geography	1½	–	–	–	
Arithmetic	4½	–	–	–	
Geometry	1½	1	1	–	
Sciences	3	2	2	–	
Drawing	4½	1½	1½	–	
Writing	1	–	–	–	
Commercial Instruction.					
1st Language (English or German)	6	6	6	6	6
2nd " " "	3	3	3	3	3
Commercial Arithmetic	–	3	3	3	1½
Commercial Geography	–	1½	3	3	–
Merchandise	–	1½	–	–	–
Commerce and Accounting	–	6	6	3	3
Caligraphy	–	1	1	–	–
Stenography and Typewriting	–	2	2	2	–
Technical Instruction.					
Technology and Chemical Manipulations / Practical Exercises	–	–	–	20	30
Studies	14½	14	12½	8	6
Total hours	48	49½	49½	49½	49½

SECTION 2: HIGHER PRIMARY COMMERCIAL AND INDUSTRIAL SCHOOL FOR BOYS, NANCY.

This school at 64 Grande rue, founded by the City in 1835, has 430 pupils. It furnishes higher and vocational primary instruction to young persons who are going to be apprentices or follow administrative, industrial, or commercial pursuits; or who are preparing for government schools, for which a knowledge of the ancient languages is not necessary. Nearly all the pupils belong to the laboring classes, who know how to appreciate the advantages of supplementary instruction, and deny themselves for the sake of educating their children.

Pupils are taken at about the age of 13. Nearly all have first been through the Primary School, and having obtained their certificate of studies, have taken a higher course of one year in their first school, from which they received a special diploma.

The course comprises 4 years. There is first general teaching, which has for its object to prepare young men for social life.

The first year consists of four parallel classes comprising general instruction as follows:—morals; French language; lectures on fine literary works; history and geography; civic instruction and elements of social economy; applied arithmetic; algebra and geometry; rapid calculation; physics and natural sciences; hygiene; geometrical drawing and art drawing; singing and gymnastics. A few hours only are given to trade teaching, modelling, manual training and accounting.

Differentiation of Courses.

From the second year the program differentiates according to sections, and becomes more preparatory for future trades.

1. *Sections* of *general instruction*, which take candidates for secondary studies, Normal Schools and various offices (post-office, railway, army, etc.), develop and complete the general program of the first year.

2. *Commercial Sections*, where the future employees of commerce are grouped together, add to the general program a more complete study of German and English, commercial geography, correspondence, accounting, book-keeping, stenography, typewriting, elements of commercial and industrial law, and a course in political economy.

3. *Industrial sections*, subdivided into two groups, accept: (1) future apprentices first in the school and then in the workshops; and (2) those young men who wish to continue their studies in secondary or superior technical schools (arts and trade, master miners, electro-technical institutes, mechanical, chemical, dental, etc.) or even others, who are preparing themselves for professions where mathematics and drawing are especially needed (bridges and roadways, draughtsmen in railway offices, etc.) In the industrial sections the principal subjects are mathematics, mechanics, industrial electricity, drawing, technology, industrial chemistry and manual work.

The large workshops with electric plants and machine tools permit of great development in industrial education.

The budget of the schools in 1909 was 75,160 francs, of which about 43,000 came from the State and 36,000 from the City.

PART-TIME SCHOOL: The school has a course for improvement (part-time school) of two sections, industrial and commercial, organized for apprentices and employees of commerce and industry. The industrial classes are more particularly attended by superintendents, workmen and designers from mechanical and electrical industries.

The courses are three years in both sections. They are open all the year round, three mornings a week, November to July, from 6.30 to 7.45 a.m. Time is taken partly from the working day, which is supposed to begin at 7 a. m.

In the part-time school there are 158 students—75 in the industrial course and 85 in the commercial. It is partly supported by donations from industrial houses, banking establishments and large stores in the City. The total amount in 1909-10 from these sources was 4,700 francs, the expenses being 4,000 francs.

SECTION 3: EASTERN VOCATIONAL SCHOOL FOR BOYS, NANCY,

This is a very important free (private) school, at 29 rue des Jardinières, with an attendance of about 450 pupils, whom it prepares for all callings that do not entail the study of the classic languages. There are primary classes and a vocational school proper. The lower primary course is under the care of a female teacher.

The qualifications for admission are,—age 13, and the possession of the certificate of the primary studies, or an equivalent preparation as revealed by an entrance examination.

The vocational course is ordinarily 4 years, but there is a 5th for pupils who wish to complete their technical education and take the courses of the Electro-technic Institute and of the Chemical Institute of the faculty of sciences.

Besides general instruction the pupils learn forging, fitting of iron, modelling, and foundry and electrical molding. They are trained to operate machine tools, steam engines, and the dynamo-electrical engines which light the school. A cupola and a bronze furnace have been installed in the establishment. Five dynamos of from 25 to 50 ampères, and also a battery of accumulators operate in the workshops. The work done in the shops is partly intended for manufacturing.

A distinct class is devoted to preparation for the Schools of Arts and Trades.

MECHANICAL, COMMERCIAL AND OTHER SECTIONS.

1. *A 2 years' Course for Mechanics* is designed to train quartermasters, pupil-mechanics for the crews of the fleet, machinists and fitters for private industries. It is intended especially for young persons who are unable or do not wish to enter the Schools of Arts and Trades.

2. *In the Commercial Section* the course is 2 years, and the program is the same as the 1st year of the Higher Commercial Schools. This school of commerce comprises real commercial counting-houses where pupils learn accounting.

The section is subsidized by the Department of Commerce, and has courses in accounts current, commercial correspondence, technology, industrial accounting, exchange and arbitration, and finance. Diplomas are granted at the end of the course for the Higher Commercial School at Nancy.

3. *In the Electrical Section* there are courses in applied mechanics and resistance of materials, machine tools, boilers, industrial physics, and industrial accounting; and pupils take the course in industrial electricity of the University with practical work.

4. *In the Section of Spinning and Weaving* the Course comprises applied mechanics and resistance of materials; industrial electricity (University Course); machine tools; boilers; industrial physics; practical work in spinning and weaving, adjusting and mechanics, industrial drawing and sketching; a course in dyeing and dressing (that of the Chemical Institute); course in decorative composition applied to the textile industry.

Expenses, Scholarships, Etc.

Board is 800 francs for pupils of the 5th year; 700 for 4th year, and for 2nd year of commercial section; 620 for pupils in other classes; half board 350 francs. Washing costs 35 francs. Day school annual fee is 80, 100, 120, 150, 180, or 200 francs according to the class; for Supervised Day-School 30 francs additional.

Annual fees for working in the shops, 30 francs; for chemical manipulations 50 francs. The manipulations and workshop are optional for the four first years. Special terms are made for teachers' sons.

The Eastern Railway Company gives 15 scholarships for sons of employees; 4 are given by the Department, and from 20 to 30 by the State. Subsidies to pupils have been contributed by various societies of Alsace-Lorraine and by the Association of former pupils.

SECTION 4: PRACTICAL INDUSTRIAL SCHOOL FOR BOYS, ST. ETIENNE.

This is a well organized day school, well equipped with tools. During the last 5 years it attained its maximum number of pupils, 460. The following trades are taught:— Adjusting, industrial electricity, gunsmithery, forging, joinery and patternmaking, weaving and textile fibres, modelling and sculpture.

The qualifications for admission are,—age 13, and the possession of the certificate of primary studies, or an equivalent preparation as revealed by an entrance examination.

The course of studies occupies 4 years, a considerable portion of this time being spent in the drawing room. All pupils work from sketches or drawings executed by themselves. In the third year they make out estimates of their principal work.

In the preparatory year pupils attend all the workshops, and specialize from the beginning of the first year.

The machinists go in turn to the forge workshop to learn how to forge their own tools, and also do a little molding with the pupil modellers.

In the third year the pupils take a course in industrial electricity.

Those in the Mechanical Section who wish to follow the trade of electrician take a fourth year of studies devoted exclusively to electricity following a special elementary but sufficiently complete course, and construct various kinds of apparatus and machines in the workshops after having first drawn the plans from data furnished by the professor. They are also trained in the laboratory in the measurement of electrical quantities, and in the mounting and management of the commonest forms of apparatus, and also make many machine tests.

Pupils in the Weaving Section receive special lessons in accounting, legislation and commercial geography, and also study one modern language.

Preparation is given for the School of Arts and Trades.

Since 1900 the Syndical Board of the St. Etienne gun manufacturers has granted, to each third year pupil in the gunsmithery division, a prize varying from 50 to 100 francs at the end of the school year, as an encouragement.

SECTION 5: PRACTICAL COMMERCIAL AND INDUSTRIAL SCHOOL FOR GIRLS, ST. ETIENNE.

Girls holding primary education certificate enter here at the age of 12, otherwise at 13, when they must pass the entrance examination. Besides general education in the two divisions the programs comprise:—

Commercial Division:—accounting and book-keeping, commercial correspondence and writing, merchandise, commercial geography, legislation, political economy, English, shorthand, typewriting.

Industrial Division:—technical and practical instruction in manual work. Workshop pupils devote the first year to the study of sewing proper and are not specialized. They are trained to assist in all practical ways, for they know how to sew thoroughly well. They specialize in the second year, choosing (1) cutting, assembling, and making up women's clothing; (2) millinery; (3) the care of linen; (4) embroidery, white and for furniture; (5) ironing, starching and cloth cleaning.

There are 400 pupils, about 200 in each section, with 12 workshop instructresses, and 13 professors for other branches.

The course is generally three years, but when girls are rather young they may stay another year. On leaving they are likely to go into workshops and businesses. Young girls from the commercial section are very easily placed as assistant book-keepers or stenographers and typists. They spend 8 hours daily in class.

Course in Industrial Drawing.

All pupils take a course in industrial drawing adapted to their chosen specialty, having in public schools learned the rudiments of drawing and designing.

There is a general competition in drawing amongst girls from all the schools in France, under the direction of the Minister of Commerce and Industry, and all the drawings are sent to Paris, where special mention is given to those that are good.

Drawing begins with straight lines, curves and angles, then passes on to composition and drawing from natural objects; geometric composition, rectangular, circular, loops and straight lines. The work is original; nothing is copied. Pupils do perspective, object drawing, and geometrical lines from nature. As crayon work is quicker than brush, always uniform, and utilizes very pretty colours, crayons are used.

In the second year there is a course in designing, which does not include clay modelling, as it is not thought practical. There is also composition and execution of embroidery, eyelet work, and braiding.

In the third year they specialise in actual flowers and composition from flowers, flowers conventionalised into elaborate designs; application to furniture, tapestries; Egyptian, Greek, and other styles of decoration; application to garments; designs on dresses made to scale; study of anemone and application to collars of ladies' dresses.

In the fourth year they study the history of costume,—Egyptian, Greek and Roman—and its development during various centuries, with illustrations. Students have to originate every part of the design the subject being a tailored serge suit.

Laundry and Sewing.

In the laundry the girls are taught washing and ironing as part of their home education, bringing articles from home, the work being done by groups of six.

Sewing in the first year comprises elementary exercises in coloured thread; straight and curved lines; then the application of the various stitches in the elementary lesson in composition. They mix colours according to their own taste, and when wrong are criticised and told what colours would match.

Shop Work, Exhibitions, etc.

In the first year they go to the shops, so as to be able to select when they want to specialise. For instance, those who specialise in embroidery have 25 hours of shop work in both the second and third years; in the first year only 22 hours.

All the compositions are made by the students themselves, and the articles are made from their own drawing. The teacher confers with the professor of drawing, so that what they do in the drawing class is executed in the workshop. After the year is over they exhibit their work, which is sold to the public, the proceeds being distributed among the pupils.

We saw fine special embroidery made with narrow crimped ribbon manufactured at the silk works in the town. There are preparatory exercises for this kind of embroidery, which produces beautiful effects in raised work by rolling the narrow ribbon.

Extension Work.

The school has an outline of the course for the dressmaking and hat-trimming sections, as furnished to all the schools in France under the direction of the Minister of Commerce and Industry. This outline is sent to the professors, and the pupils have to work from sealed orders.

The third year students prepare their competition articles to be judged for the certificate. The subject of composition is given by a furnisher of St. Etienne, a member of the committee. The subject is worked out in thin cheap gauze, and the finished work in serge. The dresses are given to the girls when they leave school.

The Commercial Department conducts correspondence with various towns in France, England, Ireland and Holland through business houses conducted by students of other schools, the transactions involving trial balances, balance sheets, etc.

The correspondence is in longhand and typewriting; copies of all letters are kept on file; cheques and postal orders are issued, etc. Four of the girls go to England to stay for a year and return to situations.

SECTION 6: LA MARTINIÈRE SCHOOL FOR BOYS, LYONS.

This school, at 9 rue des Augustins, was founded through a legacy left by Major-General Martin, who was born at Lyons in 1735 and died at Lucknow, British India, in 1800. The legacy, originally 700,000 francs, remained untouched until 1826, when the capitalized interest had reached 1,700,000 francs. Later on 515,000 francs were realized. Including the boys' and girls' schools, La Martinière has an estate and collections valued at from 1,200,000 francs to 1,500,000 francs, and an income of about 280,000 francs.

The school, opened in 1826, has been installed since 1833 in its present quarters, a former monastery of the Augustin Friars. It was organised by Mr. Tabareau, a former pupil of the Polytechnic School, aided afterwards by Mr. Dupasquier, a professor of drawing, who invented for this school special methods of teaching. These were the cause of its prosperity, and still constitute its originality.

It is administered under the authority and oversight of the Prefect by a free (private) commission whose members are nominated by the municipal council and definitely appointed by the Minister of Commerce.

La Martinière is a vocational school devoted to the study of the sciences and arts applied to industry and commerce. Whilst specialising pupils during the latter years of their studies, it aims especially to fit them to succeed in any

profession, and to confer on them the advantages of a developed intellect, habits of scientific reasoning, a comparatively wide education, and particularly enthusiasm for their work. This latter quality and the abolition of the "foot of the class" are the result of the special methods of teaching here, especially of Mr. Tabareau's method, of which the Commission witnessed an exhibition.

Courses of Studies.

The school is free, and receives only day-scholars at least 13 years of age. The entrance examinations comprise:—*Mathematics*: enumeration, the four rules applied to whole numbers, to decimal fractions, and to ordinary fractions, the metric system, problems. *Grammar*: dictation chosen from a good author, which serves also to test the writing and orthography of the pupils. *History and Geography of France.*

La Martinière has 600 pupils. Every year it receives about 300 aged 13 from the Primary School. There is also a preparatory year for pupils who enter at 12 years of age. The duration of the course is 3 years after preparatory year.

The Preparatory year:—Reading with explanation, grammar, history and geography, writing, arithmetic, mathematics, drawing and manual work.

First year:—The instruction is general, comprising grammar, history and geography, writing, mathematics, physics, chemistry, drawing, manual work.

Second year:—French, history and geography, writing, mathematics, land-surveying, accounting, physics, chemistry, and drawing. English and weaving for the commercial section; and workshops for the section on civil engineering.

At the beginning of the second year the pupils choose the section to which they wish to belong, and are slightly specialised in preparation for the third year, when they are divided into two distinct sections (1) on commerce and weaving, (2) on civil engineering and electricity.

Third year (commerce and weaving):—French and commercial correspondence, accounting, office work, penmanship, weaving, English, commercial geography, the study of merchandise, chemistry, commercial legislation, and political economy.

Third year (civil engineering and electricity):—pure mathematics, descriptive geometry, industrial mechanics, civil construction, electricity, manipulations of electricity, machine design, design of civil constructions, chemistry, industrial legislation, manual workshops, visits to workshops.

Badge of "Corporal," Diplomas, etc.

After the general closing, the badges and functions of "Corporal" are bestowed on the first pupils of each section. At the end of the third year of studies diplomas of the 1st and 2nd class are awarded to those pupils who have obtained sufficient marks, from 50 to 60 diplomas being granted every year.

The final examinations are conducted by boards of examiners composed of persons not connected with the school—merchants, industrial employers, artists, and professors chosen from amongst the most competent persons in each specialty. The 1st class diploma in the section on civil engineering assists its possessor to enter the competition of the National Schools of Arts and Trades.

Pupils on leaving La Martinière generally obtain situations in business or at industrial work. There are always more positions offered by the employers on the school board than there are available pupils.

The heads of nearly all the large dyeing establishments at Lyons are former pupils of La Martinière, as are also a considerable portion of the large mechanical builders, and a great number of employers in business houses, in the silk trade or elsewhere.

For the last 80 years the school has rendered signal services to the commerce and industries of the south-eastern part of France.

SECTION 7: LA MARTINIÈRE SCHOOL FOR GIRLS, LYONS.

This school, at 20 rue Royale, founded in 1879, is under the same administration and management as the school for boys. It is governed directly by a sub-directress; is free, and receives only day-scholars at 12 years of age, on leaving the Primary School It is a vocational school, intended to train girls of the working classes at Lyons, giving them at the same time a manual trade. The instruction is composed of one part theory, for all pupils, and each one must be apprenticed to a trade chosen by her parents from amongst those taught at the school.

For apprenticeship the pupils of the same division are divided into as many sections as there are different trades taught at the school. The trades taught are:—commerce, industrial drawing, placing of cards for silk manufacture, embroidery, sewing (gowns and ready-made clothes), stenography and typewriting. The manual workshops, where the apprenticeship is carried out, are organized industrially. All pupils, whichever trade they choose, learn sewing and ironing.

The ordinary course of general studies and apprenticeship is 3 years, but pupils who have completed 3 regular years of studies are admitted to the school workshops to perfect their apprenticeship, and under the direction of the professors execute work which has been ordered by private business houses; such pupils receive the entire pay for such work.

Diplomas are awarded to the best pupils in the various sections of apprenticeship after 3 years of study.

Satisfactory pupils are placed in positions as far as possible, through the school, and find positions very readily.

SECTION 8: COURSES FOR APPRENTICES AND ADULTS.

How Courses may be Established.

It is not considered right that youths should receive no intellectual training between their leaving school at about 12 years of age and entrance into the army. It was suggested that popular instruction in the form of courses might with advantage in many cases be replaced by instruction in the form of lectures, which are more vivid and are rendered more interesting accompanied by lantern views; hence the State by the edict of January 11, 1895, endeavoured to revive learning among adults by encouraging, through subsidies, the formation of courses and lectures. This edict provides,—

(1) That courses may be established by the Prefect at the request of the Municipal Council and on the advice of the Inspector of the Academy;

(2) That in classes for adults or apprentices the instruction may bear on the subjects of elementary and higher education as established by the rules and regulations, or may comprise theoretical and practical courses specially adapted to local needs;

(3) That adult courses may comprise classes for the illiterate, special courses for young persons who wish to complete their education, and lectures and readings for all;

(4) That two or more distinct sections may be established, according to the age and degree of education of the pupils;

(5) That no public schoolmaster can be compelled to conduct a c'ass for adults;

(6) That the courses and lectures may be entrusted to any person who desires on the proposal of the Mayor, approved by the Prefect, and on the advice of the Inspector of the Academy;

(7) That the program of such courses and lectures be submitted to said inspector when the request is made;

(8) That the commune assume the expenses of heating and lighting;

(9) That the State subsidy, granted on the proposal of the Prefect, shall not exceed one half of the cost which these courses entail;

(10) That not only State subsidies, but grants of books and educational apparatus, may be allowed to educational associations established to organize such courses for adults;

(11) That when the commune assumes the expenses of the course, the terms of remuneration be arranged by agreement between the commune and the Director of the course.

Campaign of Agitation.

Since 1895 popular opinion in favor of undertakings intended to assure the future of public education had produced a salutary agitation throughout the country. Several educational congresses took up the question, that at Havre being particularly impressive, both from the number of delegates and the fulness of the

debates. Its Secretary was Mr. Edouard Petit, a man of action, who always fought stubbornly for the education of youth, for which he laid the foundation in a successful pamphlet entitled "From the School to the Regiment". When he became Inspector-General of Public Instruction he continued his propaganda in favour of post-academic work, the inspection of which had been given into his charge. Every year he travels all over France arousing the apathetic, awakening enthusiasm, and communicating to all some of the fine flame which animates him in favor of public education.

The Inspector-General's Report.

In his report on public education in 1907–8 Mr. Petit shows that the work is progressing but that, as in the day-school, the evening school is worth only what the teacher is worth, and that attendance is secured only if useful and interesting lessons are given. He notes the following developments among others:—

(1) The establishment, through the initiative of the Prefect, of elementary courses for the illiterate in the Canton of Rochechouart held in 7 isolated farms during 5 months, attended by 200 male and female peasants from 14 to 50 years of age;

(2) Multiplication of courses for illiterate soldiers;

(3) Increasing success of public reading;

(4) Development of good fellowship;

(5) Ever increasing activity of Associations of former pupils who have found their bearings—those for boys towards preparatory military education and rifle shooting; those for girls towards household education;

(6) Increase in the number of friendly associations for young girls.

Mr. Petit notes that the courses for adults are still growing. Since 1894–5, the period when they began to rise from their long term of decadence, their number has rapidly increased. From the original, 8,288 courses they reached the figure of 48,565 in 1907–8—30,271 being for boys and 18,294 for girls. The above refers only to public courses given by male and female teachers; but to make it complete there must be added about 6,000 courses given by the great educational societies, boards of trade, committees of employers and workmen, etc. In large cities the courses for adults are numerous, but they appeal less to the illiterate than to those who need supplementary and especially vocational education.

Mr. Petit lays particular stress upon the subject of school attendance. He would like to see the curriculum extended to the 15th year as in Switzerland, and also to have continuation instruction made compulsory.

He argues, from the crisis through which apprenticeship is passing, that the school must be the necessary complement of the workshop, and that it is a matter of urgency to impose upon the heads of business enterprises the legal obligation of sending their apprentices to attend the supplementary classes.

CHAPTER XXXIII: THE VOCATIONAL SCHOOLS OF PARIS.

SECTION 1: INTRODUCTORY.*

The Vocational Schools in Paris are a part of that complex and comprehensive organism, the French educational system, which directs or influences every grade of instruction and every kind of educational agency from the primary school to the University, and from the free lecture to the Prix-de-Rome. Their origin may be traced to conditions in the social and industrial life of the French people.

The characteristic feature of the trade-organizations under the old regime of the eighteenth century was the Corporation. It comprised (1) masters or master-workmen, who could open a shop, or work on their own account, (2) journeymen, and (3) apprentices. The latter were compelled to pass a most laborious novitiate of four or five years, but at the end of it they possessed all the secrets of the trade. The master was allowed but one apprentice at a time, to whom he was bound by obligations from which he could not free himself, and which, as a rule, he was anxious to fulfil.

At the head of each Corporation was a Board of Control, composed of four or six members selected from among the masters, which exercised a very strict and often despotic supervision over everything pertaining to the Corporation. Such an organization had its defects. The initiative of the artisan was paralyzed by a set of regulations that extended to the minutest details of his work. Moreover, not every one who wished was allowed to work. Work itself was a privilege. But on the other hand, the Corporation maintained a high standard in the craft. Before being able to obtain the right and title of a journeyman, the apprentice had to prove that he was fully acquainted with every detail of his profession.

In 1776 Turgot, a minister fond of reforms, suppressed the Wardenships of Boards of Control, and the charters of the Corporations, and proclaimed absolute freedom of work. The Corporations reappeared after his day, but only for a short time, for the National Constituent Assembly put Turgot's decree again in force. The law of 1791 read:

> From the first of April next, every citizen shall be at liberty to take up any profession, art or trade that he likes. He merely has to secure a license and comply with the regulations.

Equal Rights for All.

This law substituted equal rights for all in place of privilege for the few, but it dealt a blow to craftsmanship, from which it has never recovered. There

*Condensed from Henry Turner Bailey, Editor "School Arts Magazine", Boston, supplemented by the observations of the Commission.

were many who foresaw the consequences of the law and raised their voices in protest. Even Marat, in his newspaper "The Friend of the People" passionately defended the Corporations.

At various times under the Consulate, the Empire and the Restoration there was something like a reaction in favor of the Corporations, but all movements towards re-establishment were unsuccessful. Turgot's doctrine prevailed.

A return to the medieval system would be impossible to-day, although many thoughtful Frenchmen still regret the passing of the Corporations. An impartial student of the history of French craftsmanship must admit that from the time of the Revolution there was a steady decline in the industries of France. French products no longer held undisputed supremacy. Manufacturers had to reckon with foreign competition. Rival industries beyond the borders of France began to encroach upon home industries. It became necessary to produce a great deal, quickly and cheaply, lest the markets should be closed to the products of French industry. This ushered in the division of labour to an extreme degree. The workman became a specialist. He knew but a small part of his trade. Of every process but one he was ignorant. His hand, instinctively and with a purely mechanical effort, made always one and the same detail. Ingenuity was not required, invention was at a discount, research was dead. While this unfortunate condition may have resulted in part from general economic causes, many of the keenest French thinkers attributed it to the decay of the apprenticeship system.

Better Training Demanded.

From all quarters an irresistible movement of opinion began to assert itself in favour of better training for craftmanship. In Paris a society was formed to establish apprenticeships in the manufacture of opera glasses, and another society attempted to improve the manufacture of wall paper. Wealthy individuals established private vocational schools, and others gave scholarships in them. Every thoughtful patriot felt that something must be done to rehabilitate French industries.

Meanwhile the City Government awakened to the need of discovering something to fill the educational void left by the disappearance of the Corporations. Its first expedient, in 1845, was the bank-book plan, providing for free instruction in certain approved private institutions. This plan proved to be unsatisfactory and in 1855 it was abolished and a system of scholarships was substituted, but this plan proved hardly more satisfactory than the first.

As a further encouragement to better vocational training, the City of Paris founded evening classes devoted especially to drawing.

But all these were mere palliatives. The remedy was still to be found. After the fall of the Empire, the question of vocational instruction in Paris was one of the first considered by the newly elected Municipal Assembly.

A Bill prepared by M. Greard, Director of Primary Instruction, was laid before this Municipal Assembly in 1872 calling for the creation of a school of apprentices in the iron and woodworking trades. M. Greard claimed that the

placing of the child with manufacturers upon his leaving the primary schools—a placing made hurriedly, without discrimination, and merely with a view toward immdeiate wage-earning—was disastrous in its outcome. He described the life at the workshop; the distrust of the workman who sees in the apprentice of today the workman who will crowd him out tomorrow; the indifference of the foreman whose mind is absorbed in affairs of his own. He called it an intermittent apprenticeship without guidance or method, limited to acquiring a knowledge of some fragment of a profession or trade. He described vividly the errands out-of-doors forced upon the young boy, the dangers of the street, and those not less formidable of the shop, and concludes with these words:

Need for Vocational Schools.

Thus, from whatever point of view the general conditions of an apprenticeship in Paris are considered, it does not meet the needs of the child. Want of foresight on the part of the boy's parents, indifference on the part of the patrons or masters, impotence of the law, everything, seems to conspire against the apprentice. Even the development of commercial competition and the progress of industrial mechanics turn out to be to his detriment. Every one agrees that generally the shop, that ought to serve to develop all the forces of the child, wears out his body before nature has finished the making of it, puts his mind to sleep just as the school had begun to awaken it, stains his imagination, corrupts his heart, and poisons whatever spirit of craftsmanship or love of his trade he may have had. This deplorable school in individual morals dwarfs the man in the apprentice, the citizen in the workman, and does not even produce a good mechanic.

This is an authoritative statement as to the character of apprenticeship in Paris, before the establishment of the Vocational Schools.

A vote was secured to establish, as an experiment and possibly as a type, a school of apprenticeship for the iron-working and wood-working trades. "This act," says M. Lavergne, 'was of the utmost importance; it meant a new standpoint, a new starting-point for professional instruction in the municipality of Paris. It was a step into the unknown, the unexplored. It was a venture involving some risk." The future of French industries would be determined by the outcome.

Primarily Trade Schools.

As soon as the project had been agreed upon, work was commenced. The result was the establishment of the famous Diderot School, the object of which was the training of well-instructed and skilful workmen, capable of earning their living on leaving the school. Thus began the era of municipal activity in regard to technical instruction, which spread to Lyons and many other cities.

The Professional (Vocational) School is therefore primarily a trade school, a school designed as a substitute for the old apprenticeship system. Since 1880 various sorts of these schools after the plan of the Diderot School have been established by the city of Paris. These now number 15—7 for boys and 8 for girls.

Management.

Each of the Professional (Vocational) Schools is supervised by a Committee of Inspection nominated by the municipal council. It is composed of members of that assembly, manufacturers, merchants of recognized professional ability, a representative of the Ministry of Commerce, and a representative of the Ministry of Instruction.

The powers of the Committee are not inexorably fixed by law. Their duties are primarily administrative and financial, but inevitably they become advisory as well, for upon each Committee are men who are able to give valuable advice on technical matters. Each has therefore all the liberty possible. Its power extends even to the modifying of school programs in accordance with new needs, or the fluctuations of taste and fashion. It prepares the annual budget, audits the accounts, and in short has charge of everything pertaining to the organization and management of the school.

But the Administration does not divest itself of all powers of control. It sometimes moderates the enthusiasm of the Committee, asserts its authority if rules are ignored or broken, and calls the Committee to account if expenses exceed appropriations.

The Committee of Inspection, by virtue of the very manner in which it is made up, is worthy of all confidence. In its zeal for the success of its school it may try to push ahead too rapidly, but its boldness is a corrective of the tendencies of the Administration towards conservatism and procrastination. The combined action of the two results in bringing about a healthy normal growth in every vocational school in the city.

Each school is organized with Officers of Administration and a Staff of Instructors.

In the schools for boys, the Officers of Administration are a director, a general superintendent, supervisors in varying numbers, and an accountant. In the schools for girls, the Officers of Administration are a lady director, who must be present at every session of the school, and an accountant.

Two Groups of Instructors.

The Staff of Instructors includes two groups: one giving general instruction, and another giving technical instruction. General instruction is entrusted to teachers of the standing of those employed in the Higher Elementary Schools of the city. But each school employs a specialist in literature and science.

The technical instruction is in the hands of thoroughly trained men and women of recognized ability, each in his own craft or trade, and holding a municipal certificate to teach, won through competitive examinations.

As a rule, the mornings are devoted largely to the general courses, and the afternoons to the technical courses, or the mornings to lectures, and the afternoons to studio work.

The walls of the rooms are hung with the most successful works of graduates of the school, as well as with photographs and casts of masterpieces. In some cases the walls and windows have permanent decorations made by the pupils.

Interesting Teaching Methods.

The methods of instruction are as direct and as thoroughly correlated as possible. In the History of Art, for example, the instructor while lecturing draws from memory upon the board the illustrations he requires, no matter how complex. The pupils take notes in pencil (which are afterwards corrected and

copied in ink) and copy his drawings as he makes them. The board is of gro und glass, in some cases, and of a middle grey colour. Upon this the instructor draws first in outline, indicating the geometric and perspective construction; upon these constructional lines he completes the drawing, using white chalk in the lights, charcoal in the darks, and coloured chalk wherever it will help to delineate the original object. The pupils have notebooks with leaves of grey paper upon which they work with black, white, and coloured pencils, following always the instructor step by step. The pupils thus receive instruction in the history of art, in the method of teaching, in the method of drawing, and have practice in drawing at the same time. The instructors are thoroughly trained masters, with the history of art, perspective, anatomy, costume, or whatever they teach, not only at their tongues' ends but at their fingers' ends. Their blackboard drawings are models.

The work required of the pupils may be characterized as disciplinary and practical. Drawing with the point precedes water colour; water colour on dry paper with the utmost precision of touch precedes water colour on moist paper with blended hues. Truthful perspective, correct proportions, detailed graphic description, faithful colouring—these are the requirements, these are the essentials. Originality, artistic effect, clever technique—these may come later if the pupil has genius. The applications are ever in the realm of the immediately useful. In an exhibit of the Bernard Palissy School there were original designs for program covers, book-plates, letter-paper stamps, hand mirrors, dressing tables and their furnishings, desks, inkstands, penholders, blotter-pads, cups and saucers, flower-pots, bowls, utensils for the fireplace, folding screens, etc. In the girls' school, Rue d'Abbeville, designs for fans, for the decoration of cups, saucers, plates, vases, for doilies, towels, embroideries of all sorts, cuffs, collars, silk things of many kinds, miniatures on ivory and glass.

Pupils' Work Judged by Experts.

Pupils are promoted from year to year upon the recommendation of teachers, and the attainment of excellence in work. At the end of the course, however, certificates are granted not upon the testimony of teachers, nor according to the judgment of any group of school officials, but according to the decision of a competent jury of professional people not connected with the school, engaged in business, artists, printers, potters, milliners, decorators, dressmakers, manufacturers, whose judgment is recognized everywhere as authoritative. For example, the successful pupil must produce a brooch acceptable to the best jewellers in the city, or a costume approved by the best modistes, in workmanship the equal of the goods sold in the best shops.

The City awards not only certificates and diplomas but prizes for excellence in results, and these prizes are often in the form of appropriate books, beautifully bound in red morocco, and stamped with the seal of the city and an inscription beginning with the valued words "From the City of Paris."

The maintenance of these 15 Vocational Schools costs the City of Paris annually over 1,750,000 francs, or $350,000.

Mr. Lavergne's Answer to Critics.

Of course there are critics who doubt the real utility of these establishments built and maintained at such expense, and who declare that the results do not justify the outlay. M. Lavergne says:—

There is nothing in the present situation that would justify these fears or explain these discouragements.

The Estienne School, the School of Physics and Chemistry, the Schools of Drawing, Germain Pilon, and Bernard Palissy, the Diderot School, and the Boulle School are excellent nurseries from which a great number of artists, physicists, chemists and workmen come forth, capable of earning a livelihood immediately, well acquainted with all parts of their trade or craft. Having come in contact with the real and practical work of the shop, they are able in a short time to become themselves foremen and directors.

Among the pupils terminating their studies in this establishment every year, there are some who go elsewhere to complete their professional education; others enter the school of Fine Arts, where they are speedily classified among the best students. In 1898 the first and second great prizes offered by the Government were obtained by former students of the Estienne school, It is true these are instances of exceptional success obtained by choice students endowed with remarkable aptitudes, but they nevertheless bear witness to the great value of the instruction given in that establishment.

As to the pupils in physics and chemistry, they easily find positions properly remunerative in private industries. Some find employment as chemists to the Government, in the department of Railroads, or in the Custom House.

It is proper to add, that the situation shows everywhere a tendency to improve from year to year, as any one may discover for himself by reading the reports of the Committee of Inspection, accompanying their annual estimates for appropriations. The most confirmed of pessimists will find therein reasons for believing in the vitality and usefulness of the professional (vocational) schools for boys. There is just as much confidence in the future of the professional (vocational) schools for girls, although at first sight the results seem less favourable.

The proportion of young girls practising (after leaving the school) the trade in which they have been apprentices, is not very high. On the other hand, there are many girls whose situation is not known, or who go back to their families. Those who find a position in the workshops have in the beginning only a very moderate salary. But the facts are that well-trained girls after a short time have their salaries increased. Their work speedily becomes remunerative. Most pupils leave the school when they are 18 years old. At that age one is not supposed to have 'arrived." The statistics of the last year are (everything considered) rather satisfactory. Without doubt, in the professional schools for girls, as well as in those for boys, quite a number of students do not go to the end of their studies. They withdraw after their second year of apprenticeship, sometimes even after the first year. The reason for this state of things is complex. But usually the cause is the impossibility of the family making any farther sacrifice. The children must work. The city of Paris, it is true, maintains scholarships, but they are few in number, and the amount of each is small. In many cases the scholarships provide but an insufficient relief for the families. The scholarships ought to be increased in amount to meet the needs of young girls whose parents are in straitened circumstances.

Moreover, the girls at the end of their apprenticeship sometimes find difficulty in getting a position. They need advice and protection. The guardianship of the school must extend beyond the school. The Committee of Inspection, and the lady directors, do not lose sight of the young girls when they leave the school, but endeavour to make easy their first steps, and to assist them in every way possible.

But let us not fail to notice that if a certain number of pupils, after once finishing their apprenticeship, simply go back to their families, they nevertheless derive an advantage from what they learned during the three or four years spent in the vocational schools. They have acquired manual dexterity and taste. They know how to sew, embroider, make a dress, a hat, in fact they can do everything that is necessary in a well-to-do household.

We are convinced that the condition of our Parisian vocational schools (already good) will be but improved in the future. At all events the contingency of retrogression cannot be thought of.

Let us not touch what exists, except to amend or complete what needs to be amended or completed. Everywhere these schools are respected; they are appreciated by the common people. They are helping to solve the very grave question of adequate apprenticeship. They have had a strong influence in restoring to France her prestige in the artistic handicrafts.

SECTION 2: EXTENT OF THE PROVISIONS.

While the Paris Vocational Schools are nominally included in the State system of public instruction, they are in fact under the supervision and control of the Municipality, which jealously guards its independence. The schools are practically supported by the City, and so far from being subject to Ministerial regulations, furnish the model for national procedure.

In Paris a child enters the Infant School at about 3 years of age, and the Primary School at 6. Here begins a regular course of manual training, which in the case of boys is generally conducted in a school workshop, and in the case of girls comprises sewing and cutting of garments, millinery and other feminine industries.

The city possesses 19 Primary Schools for boys which give supplementary general or commercial courses, 11 in which there are Supplementary Schools of vocational instruction (in iron and wood); 29 Primary Schools for girls with supplementary general courses; 16 for instruction in domestic economy and manual training; and 7 for commercial instruction.

The first Manual Training School in Paris was opened during the siege of Paris in 1872, to provide for the numerous children left without occupation, as well as for teachers who had to withdraw from the suburbs of the city. This school survived the siege, and under the advice of Mr. Salicis, then Inspector of Public Instruction, whose name it bears, it was taken over by the city as an experimental Manual Training School. It offers the most complete illustration of Manual Training in elementary grades, although this has now become a common feature of the elementary schools of the capital.

Higher Primary Schools.

As soon as the Certificate of Primary Studies is gained, at about 12 years of age (sometimes 11), the pupil is eligible for a Higher Primary School or a "Professional" (Vocational) School, or may leave school altogether.

Higher Primary education is represented by 5 important schools for boys and 2 for girls.

For Boys.

Schools providing Higher Primary instruction are designed for young persons who are going to enter business or banks, industries or industrial arts, public or private offices, and vocational schools that do not require classical studies. They even lead to the bachelor's degree, to the Central School, or to the courses preparatory to the day schools of the Schools of Mining, Bridges and Highways.

These schools as a rule take only day boarders, who are admitted free. Those who can pay are furnished the noon meal for a trifling sum ; others receive meals free.

Pupils enter on an examination open to pupils of private as well as public schools. Candidates must have been within the following age limits on October

1 of the year of examination: 1st year, 12 to 15; 2nd year, 13 to 16; 3rd year, 14 to 17. There is no exception as to age limit. The ordinary course is 3 years; then the pupils must be examined for final certificate of Higher Primary studies.

No pupil is allowed to pass from the 1st to 2nd year, or from the 2nd to 3rd year, unless he has proved by positions and examination that he has profited by his courses.

The 3rd year class has two sections: commercial and industrial. In the latter, greater importance is attached to mathematics, physics, and drawing; in the former, to the applications of arithmetic and algebra to commercial and banking operations, modern languages, commercial geography, penmanship, accounting, stenography, and typewriting.

A 4th or supplementary year was opened for pupils holding the certificate of Higher Primary studies who show particular aptitude for the sciences, and they receive more extensive and special instruction to enable them to compete for the great professional schools.

By Ministerial decree these schools are allowed a certain amount of liberty in fixing their programmes. For the first three years they follow the programmes of the Departments as a basis for teaching, but these programmes, as well as time tables, may be modified according to the existence either of a 4th year of studies, or of special sections which prepare pupils for definite careers. The 4th year programme, and also that of special sections, is made out for each school by the director or directress, after consulting the professors.

What gives a distinctive character and a special value to the instruction given in the Higher Primary Schools is the large number of special professors.

For Girls.

These schools are 2 in number: the Sophie-Germain school, which was opened in 1882; and the Edgar-Quinet school, which was opened in 1892.

The duration of the general studies is 3 years; but there is a 4th year, in which the pupils are prepared according to the object they have in view.

Candidates may compete for entrance, either in the 1st, the 2nd, or the 3rd year of studies. All that has been mentioned with reference to the competition for boys (enrolments, date and nature of tests, etc.), maintenance scholarships, and students from the suburbs, applies to the girls.

The instruction is free. Only day scholars are received. The pupils remain at school from 8.30 to 11.30 a.m., and from 1.30 to 4.30 p.m. They may bring their breakfast. At the Edgar-Quinet school there is a pupils' canteen where the pupils may procure, at reasonable rates, all or part of their meal. At the Sophie-Germain school the pupils may prepare their meal in the school kitchen.

Free optional supervised studies are held from 4.30 to 6 p.m.

Primary Technical Schools.

Admission to the Primary Technical Schools for boys and Technical and Domestic Schools for girls is by competition. Instruction, apprenticeship-material

and all other requirements for study or work are free to candidates who are French and actually live in Paris or in the Department of the Seine; but students from suburban communes cannot be admitted by rank obtained in competition unless their communes agree to reimburse Paris 200 francs for each pupil.

Pupils spend the whole day at school. Those who can pay are furnished the noon meal and luncheon for a trifling sum; others receive them free. The general council grants breakfast scholarships to poor suburban children.

Pupils who have completed the full course (3 or 4 years, according to the school) receive a certificate of apprenticeship; but none is granted to those who leave school before the end of the apprenticeship. The most deserving pupils who have passed the final examinations may obtain prizes varying from 50 to 300 francs.

FOR BOYS.

Among the 7 Technical Schools for Boys in Paris, in addition to the Ecole Diderot, is the Ecole Estienne (bookmaking) called after a family of printers and publishers dating back to the commencement of the 16th century, its object being "to create artistic workmen qualified not only to carry out the work of ordinary typographers but also that of allied arts". The 5 remaining Technical Schools for Boys in Paris belonging to the primary class are the Ecole Bernard Palissy—virtually a School of Fine Arts applied to Industry; the Germaine-Pilon School of Practical Drawing; Ecole Dorian, a municipal orphanage which gives extended training in iron and woodwork; the School of Physics and Chemistry; and the Ecole Boulle, distinguished for furniture and cabinet-making.

The courses in these schools cover 3 to 4 years.

FOR GIRLS.

The 8 Municipal Technical Schools for Girls in Paris are devoted to what are commonly recognized as trades for women, such as tailoring, millinery, flower making, fine lingerie, etc. Girls over 12 are admitted after examination. These schools originated in 1856 with a philanthropic lady, Elisa Lamonnier, who founded a Society which carried them on until 1907, when they were taken over by the municipality of Paris. They are now continued upon the lines originally marked out, but with regard to the later developments of the industries to which the training is directed, in all of which decorative drawing and design form an essential feature. The training is elaborate and thorough on the art side, and also in the manipulation of the material which enters into the final product, such as tapestries, lace, ivory, precious metals, leather, copper, ceramics, etc.

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CHAPTER XXXIV: TYPICAL SCHOOLS IN PARIS.

SECTION 1: BOULLE SCHOOL.

This School, for instruction in the arts and sciences applied to furniture industries, at 57 rue de Reuilly, was founded in 1882. It is intended to train skilful and educated artisans, capable of maintaining the traditions of taste and the superiority of French industry. Here the pupils serve an apprenticeship, and at the same time receive higher primary instruction suitable to their chosen trade. There are about 300 students.

The furniture produced in this School is so good that the furniture manufacturers of France have been able to secure legislation prohibiting its sale.

The competitive entrance examination comprises:—dictation, two arithmetical problems, and drawing at sight from a plaster cast, special stress being laid upon drawing.

Furniture Making and Metal Work.

There are two divisions—furniture-making and metal-work; 102 pupils are admitted yearly—60 in furniture, 42 in metal work.

In the *Furniture Section* are taught cabinet work, furniture, art joinery, elementary marquetry, upholstery, trimming and cutting, wood and stone carving applicable to ornament, to flowers and to the face, seat joinery for fancy seats with imitation wood and for wall brackets.

In the *Metal Section* the subjects are carving applicable to art bronzes, goldsmithing, jewelry, ironmongery, etc., mounting in the same applications, engraving of dies and matrices, on plate, jewelry, etc. (except that used in book work).

Turning of metals, plaster, ivory, etc, moulding and repairing are taught in both sections.

The theoretical instruction comprises geometry, technology, industrial economy, history of art, art drawing, modelling, painting in water colours, industrial drawing (cutting, assembling, mounting, and estimates) and composition in its most varied applications.

Candidates from the Department of the Seine are given the preference, provided they reach the required standard at the examinations. Pupils from the Provinces pay $100 per year, and find their board and lodging. Lunch is furnished at school for 10 cents.

Candidates must be at least 13 and not over 16 on 1st October of year of enrollment; entrance examination is in June.

Work of Pupils.

Apprenticeship at the school lasts 4 years, and all pupils spend a certain time in each workshop connected with their calling. Pupils passing final apprenticeship examination receive diplomas, tool outfits being given as final prizes to those most successful. To supplement their studies, pupils visit museums, palaces, factories, etc., for information of an esthetic or industrial character.

The equipment includes a collection of busts, casts and models; a forge for tempering; lathes for turning brass ornaments, etc. In the large workshop at the time of the Commission's visit were tables, sideboards, buffets, etc., in process, including a large table with marble top and beautifully carved legs representing human figures made entirely by the pupils. Pupils specialize; one boy may make chairs and nothing else. This is necessary in these days, as the trade has come to such a fine point. Some boys in the woodwork department were making door mouldings, and frames to hold ornamental panels, to be exhibited for competition. Marquetry is studied in various woods, involving different grains and colours. There is a show-room for fine finished work by the pupils, and some fine ornamental work by 4th year boys was exhibited.

Pupils have to make drawings of all articles before starting them in the workshop. In repoussé and raised metal work they make the design and clay model, then a plaster cast. The foundry work is done outside. Some boys were building up a model in clay on a wooden picture frame, so as to save deep wood-carving; they would have cast made from this. A clock frame in brass, composed and executed by pupils, was shown. The City of Paris presented one of these to a Grand Duchess who visited the school, and she in return presented a Russian stove made of tiles.

Stone carving is done in several kinds of stone as ornaments for decoration. This is for apprentices, and complementary to wood-carving, for exercise in the different materials.

For engraving, jewelry, etc., steel dies are made with which to stamp out key-hole frames, etc.

The boys work in models from 1st to 4th year. Carving in brass is the same as in wood. A portrait of Voltaire was being carved; ornamental pieces; gouging of brass; brazing and soldering brass for ornaments, made out of sheet metal. In the designing room the 4th year boys were making large designs of furniture and tapestry.

Special Rooms and Features.

A special room was set aside for specimens of furniture made by the students in the "Art Nouveau" to contrast with conventional styles.

Pupils in the upholstery section were cutting out material, stuffing sofas, chairs, etc. Various designs are prepared on a movable frame, which is raised or lowered to show the artistic effect of the design.

Drawing is done in water colours to show effect of colour. Drapery is first studied by geometrical drawing, which is then imitated in the goods. There is a special professor for drapery.

There is a lecture room for physics, projections, etc., and a Library.

A special feature is the study of Louis XIV and XV furniture. The pupils had made furniture in Louis XV style for the Turin Exhibition, and this is put up in the entrance to the school. In the industrial drawing class, pupils were studying tapestries in projects for a salon in the style of Louis XIV, to show the style of that epoch—about 1516.

Goods made in the school are not generally sold, though in the 1st and 2nd year pupils sometimes sell to parents or others the pieces they make. As a rule these are presented to the city authorities, museums, etc., so that strangers may see them.

In the Woodworking Department there was a special class for *Chairs*. Photographs of work of great masters are shown to familiarize pupils with the best styles, the specialty of this school being style.

There are free public evening courses for adults, in which the subjects are:—Art drawing (drawing at sight, ornament, plants, the living model, decorative arrangements and industrial applications); modelling; technical drawing or study and sketching the construction of furniture, with estimates of materials and net cost; jewelry applied to manufacturing, etc.

There is a Sunday morning course from October to May in water-colour painting applied to various industries.

SECTION 2: DIDEROT SCHOOL (BOYS).

Arts of Metal and Wood Working.

This school, at 60 Boulevard de la Villette, is intended to train educated workmen skilled in the art of metal and wood working. It gives vocational instruction to apprentices for one of the following trades: forging, metal turning, adjusting, locksmithery, precise mechanics, modelling, cabinet making, joinery boiler making, plumbing and electricity.

Competitors for admission must be at least 13 years of age and not over 17; must have certificate of primary studies; certificate of birth, residence and health; and must prove that they are of French nationality.

The competition consists of dictation, 3 problems in arithmetic, a problem in plane geometry, a composition on a technical subject of the program of primary teaching, and a free-hand sketch.

At the competition of 1908, 560 candidates offered themselves for the 120 places available.

The course of instruction lasts 3 years.

Pupils remain at school from 7.45 a.m. to 6 p.m. from November 1 to February 28; and from 6.45 a.m. to 6 p.m. from March 1 to October 31.

During the two first years the day consists of 5½ hours in the workshop and 3 hours of class; and in the 3rd year, 6 or 7 hours in the workshop and 2 hours of class. The two kinds of exercises are divided by intervals of rest devoted to meals and recreation. Many breakfast scholarships are granted to deserving pupils.

Parents of the candidates received must furnish at their own expense a uniform school cap and working costume.

Pupils receive both vocational and theoretical instruction. Workshops for vocational instruction comprises: forge, metal lathe, adjusting, instruments of precision, electricity, modelling, boiler making, joinery, locksmithery and plumbing. Subjects of theoretical instruction are: French language, history, geography, accounting, mathematics, technology, mechanics, physics, electricity, industrial and art drawing.

A certificate of apprenticeship is given after examination to the pupils who have completed their third year. Prizes are awarded to the best students.

SECTION 3: ESTIENNE SCHOOL.

Printing and Bookmaking.

This School, at 18 Boulevard Auguste-Blanqui, is intended to train skilful workmen in book arts and industries.

Competitors for admission must be at least 13 years of age and not over 16, and must also have their certificates of studies. The competition in June comprises dictation, 2 problems in arithmetic (simple applications of the 4 rules for whole numbers, decimals, vulgar fractions, and the metric system), drawing at sight (simple ornament). From 70 to 80 pupils may be admitted every year by competition. The school also receives outside pupils at a fee ranging from $80 to $120, according to the year; $200 being charged for pupils of foreign nationality.

The duration of studies is 4 years.

The pupils enter school at 8.30 a.m. and leave at 6 p.m. They may either bring their breakfast or have their breakfast and luncheon served by the canteen for 10c. Breakfast scholarships are granted to needy pupils.

Theoretical instruction is given in the forenoon, and technical from 1 to 6 p.m.

During the first four months of the 1st year, pupils pass in succession through all the school workshops; they are then distributed through the workshops where they are to serve their apprenticeship, and at the end of their 4th year certificates of apprenticeship are given, besides premiums, in order of merit, to pupils who have passed all the tests of the final examinations.

The Theoretical Instruction comprises: French language, history and geography, elements of mathematics, physical and natural sciences applied to the book industry, history of art, modelling, drawing at sight, decorative composition and industrial drawing, writing, gymnastic and military exercises.

The Technical Instruction includes:—typography, 4 trades, viz. type founding, composition and correction, printing by hand and by machine, stereotyping and electrotyping; lithography, 4 trades, viz. lithographic drawing and chromolithography, lithographic writing, stone engraving, lithographic printing. A supplementary course is given in reading and typographic composition from Greek, Russian and Arabic.

SECTION 4: PRE-APPRENTICE SCHOOL IN SHEET METAL WORK.

This is a workshop of the Society for the Development of Apprenticeship, for work in tin, sheet metal, etc. The section of our Commission which visited this school had an interesting conversation with Charles Kula, originator and director, who acted as guide.

This school does not aim to turn out specialists, but rather to make good artisans in all lines, and to give boys workshop discipline. They must be on hand punctually, must attend regularly, work diligently, and keep themselves clean both in body and mind. Every Saturday they must take a shower bath, and every day, summer and winter, a warm douche. There is proper provision for cleanliness in all parts of the shop. If they do not follow the regulations strictly they are expelled.

About 70 boys aged 12 or 13 are fitted to become workmen of any kind. They prepare work from drawings; everything must first be drawn. They work in tin because the material is cheap and can be thrown away if the work is not good. "There is an enormous waste; the question of apprentices is a question of waste."

Mr. Kula claims that after two years they are in a position to go to any workshop, even to that of a watchmaker. Some have gone to watchmakers and started with 30 cents a day, and some of the young men not 16 years of age can earn $1.20 to $1.40 a day. Everything is made by hand, no machinery, except ordinary tools, being used. This is to exercise their hands and train the pupils for manual work. They also work in wood, in iron and other metals.

Mr. Kula Deplores Street Influences.

The younger they come to the school the better for them, because they are taken from the Primary School. If allowed to run the streets after leaving the Primary School they are spoiled for all time to come, because after the Primary School they are not fitted for anything, being too small and too young to go to a regular workshop, for the shops do not want them at that age.

At the Primary School the boys have been sitting at a desk; here they are made to work in a standing position, because it enables them to breathe freely and prevents consumption. They sit only at work which can be done as well in that position as standing.

In winter they work 8 hours a day, in summer 9 hours. They are thus kept off the streets. There are no holidays whatever; but if they want to go to the country they may ask permission, and are then allowed to go for three or four weeks. They must go to the country, and must not hang around the streets, where they would lose the benefits gained at the shop. The boys all belong to workmen's families only—poorly paid persons like porters, door-keepers, and servants.

Work in Tin as Basis.

Every morning the pupils have 1½ hours of drawing, the rest of the day being devoted to manual labor. The pupils make drawings of natural size, designs of grates and brass finishings. Pupils enter whenever they wish, and generally take a two years' course.

The tinsmith trade is the most typical trade, in Mr. Kula's opinion, and he calls it the standard trade. It is a type; that is, it is the basis of everything. In the tinsmith's course the boys make coffee filters, watering-cans, etc.

Dishes were shown with bottoms hammered, rounded, etc. Mr. Kula holds that if a tinsmith can make a bevel of his tin he is on the way to become a good tracer; he can then trace in gold, copper, silver, etc., as it is done on exactly the same principle. When a young boy has learned this work and is able to do it in tin he can do it in any kind of metal, and metal working is the foundation of many trades.

Relation to Apprenticeship.

Apprenticeship consists of learning a special trade, but here there is no special trade. The preparation of apprentices corresponds to about four-fifths of the apprenticeship itself, because what the pupils learn here is the most difficult part of apprenticeship.

Every boy makes his own tools, and learns to forge and temper all tools as well. All machines are worked by hand; Mr. Kula believes that all machines moved by electricity or steam are against apprentices. In the meantime, they get physical exercise by blowing the bellows. They work in wood merely to show the adjustment to work benches, but the sheet metal is the important part. They are taught to solder. The workshop must be kept clean. There are individual lockers and a washroom with brass finishing, highly polished.

The term of apprenticeship is not officially fixed at 2, 3, 4 or 5 years; it all depends on the masters who are training the boys. The school cannot take more than about 70 pupils in all; it is a question of money. One foreman cannot look after the work of more than 35 boys.

Specimens From All-round Workmen.

In the large hall there were specimens of work in tin, iron, brass and wood; pipes beaten out, showing how a boy could become a boilermaker; brass beaten out, preparing a boy for plumbing; wooden frames assembled and adjusted, showing that a boy has practically all there is in carpentry. Pupils made the woodwork separating the drafting-room from the workshop. Boys can go from one workshop to another, and from one branch to another. When a boy has been through this school for two years he is a little workman. He knows how to use his hands. In the provinces they have to make their own tools, and he will be in a position to make them. They earn more in employment, because the masters appreciate them. Moreover, they cannot be imposed upon by being sent on messages and becoming personal servants of masters, because they can be used for something else.

Wider Use of the School Plant.

Ex-pupils may come to the school and work for themselves, for their own purposes. They have the use of the shops on Sundays. Specimens of work were shown, such as coffee-pots and filters, which the boys are allowed to take home. One boy was seen adjusting the joints of a coffee-pot, putting the wire in the top edge, which requires skill only to be acquired by training in this way. Another boy was seen inserting a piece of wire into a zinc edge, which is more expensive material, and which more advanced boys are allowed to use, though tin is the metal generally used. This work gives strength and dexterity to the hand, and when the boy goes into the workshop he knows how to handle things. These little pieces of work are very interesting to the boys, hence they never lose their hour in the workshop.

Various objects are made by hand in metal that costs very little; but it would not be any more difficult to make the articles of material that costs a great deal.

Boy's Mentality Transformed.

Mr. Kula claims that here the mentality of the boy is transformed, and he is made into a little workman. Moreover, the mentality of the parents is transformed. They begin to reason thus:—"I am decidedly not more stupid than my boy, yet my boy earns a good living, whereas I can hardly earn mine. That is certainly because he has been trained." The boys can come at any time. They work up. It is possible for a boy, at the end of 15 to 18 months, to be in a position to go into a workshop and earn a good living. A two or three years period is the maximum.

They have had young boys here 14½ years of age, one of whom wanted to be a tinsmith, and a master in clockwork took him and gave him immediately $3 a week to work in his trade.

The following samples of work were shown; a lantern of iron and glass; brass lantern; tin cash drawer; coal scuttle of sheet iron, with ribs beaten out and wire inserted in the top; a large zinc iron-handled pail with a top, coffee-pots with strainers inside, the tops of the pots having been curved with hammer. These articles are given to the pupils' parents. The rule is, "Never use your scissors except after making a very good tracing, or else you will spoil your goods."

SECTION 5: SUPPLEMENTARY COURSES IN PARIS.

In Paris two-year courses of technical instruction (manual work) for adults are held in 13 boys' schools. These courses are free and are intended for young persons, who having completed their primary studies desire to finish their education by acquiring the scientific knowledge necessary for workmen. They comprise geometry applicable to work in shops and to tracing out material

for work; graphic executions and sketches on panels; elementary lessons in technology or industrial electricity; work in wood or iron in the shop to apply the elements of geometry learned, and to execute pieces of work from their own drawings. The courses are held daily from 8.30 to 10 p.m., except on Saturdays, and work in the shops on Sundays from 8 to 11 a.m.

Pupils must establish their French nationality and be fully 12 years old, possessing the certificate of primary studies; otherwise they must be fully 13.

Whatever knowledge a person may have acquired already in any branch whatever, he can find a course to develop or perfect it. The graded courses are held once a week each from November to Easter.

There are several large popular educational societies in Paris. The Society of Elementary Education organized courses for women and girls (admission by card) and their educational activity is still exercised in other forms. Courses for both sexes, entirely free, are given by the French Young People's Union, the Society of Modern Education, the Polytechnic, Philotechnic, the Philomathic and Polymathic Associations. The only restriction is an age limit of 14 or 15 years; nevertheless there are exceptions, especially in the musical courses.

SECTION 6: VOCATIONAL COURSES OF THE SYNDICATES.

Some 60 courses have been organized in Paris by Syndicates of employers such as Jewelers and Goldsmiths, Bleaching Houses and Laundries, Bakers, the Company of Bronze Manufactures, Association of Herbalists, Grocers' Syndicate, etc.; also 70 courses have been established by Syndicates of employees such as the Syndicates of Journeymen Bakers, of Female Cashiers, of Journeymen Carpenters, and various labour exchanges in connection with the workmens' Syndicates. In addition to these, mixed Syndicates of employers and workmen, such as the Union of Female Professors and Composers of Music, Professional Hairdressing Association, Professional Association of Horticulturists, Gardeners and Agriculturists, etc., have also organized various vocational courses.

Courses for Apprentices and Workmen.

Jewelry: The Vocational School of Drawing and Modelling was established by the Syndicate of Jewelers and Goldsmiths, at the rue de la Jussienne. The evening courses take four years: 1st year, elements of geometrical and ornamental drawing, linear drawing; 2nd year, elements of geometrical and ornamental drawing, elements of architecture; 3rd year, ornamental drawing, figures, modelling ornaments and figures; 4th year, ornamental drawing, figures, study of styles, elements of modern composition, modelling and composition.

Schools of modelling, drawing and engraving of fancy articles of all kinds, are carried on at 22 rue Chapon.

Bronze: Schools of drawing, modelling and chasing of the Corporation of Manufacturers of Bronzes and of the cast iron, zinc, silver and plastic art trades at 8 rue St. Claude.

Coach-building: Vocational and artistic courses in coach building, established under the patronage of the Syndicate of Coach builders (employers) at 24 rue Laugier.

Stoker-machinists: The general trade federation of Electrical Stoker-Machinists of railways and manufactories has established courses, for stoker-machinists and electricians, treating of steam boilers; steam engines; gas, petroleum, alcohol, and compressed air motors; legislation on steam apparatus, industrial electricity, and industrial drawing. The courses are held in 21 sections.

The Syndicate has also organised vocational courses at Nantes, Chantenay, Le Faouet (Morbihan), St. Nazaire, Saintes, Epinal, Sens, Héricourt, Luxeuil, Le Havre, Evreux.

Pupils are enrolled in each of the above courses.

Stokers, conductors, machinists and automobilists.—The Central Federation of stoker-conductor-machinists of all trades has organised courses to develop knowledge necessary for running steam apparatus, dynamos, automobiles, etc. These courses are held at four divisions in Paris, and also at five places in the suburbs.

There are vocational courses at the Central Union of the stoker-conductor-machinists of manufactures and navigation of the Department of the Seine (Labor Exchange).

Roofing and plumbing.—Theoretical and practical courses of the Syndicate of roofing, plumbing, sanitary, and hygienic contractors of the city of Paris and of the Department of the Seine, 8 rue des Poitevins.

Cabinet-work.—School of professional drawing, 10 rue St. Nicholas. Founded by the industrial patronage of the Children of Cabinet-work. Professional courses of the Syndicate of cabinetmakers of the Department of the Seine (Labor Exchange).

Flowers and feathers.—The Society for paternal aid to children employed in the flower and feather industries has organised courses which are held every Sunday morning at 10 rue de Lancry. All workwomen and apprentices in the artificial flower making and feather dressing trades are admitted by request. The elementary course is given from 9 to 10.30 a.m., and the course in drawing from 10.30 a.m. to noon.

The Society has established family or boarding groups, intended to facilitate apprenticeship.

Joinery and wood flooring.—Schools of drawing and modeling were established at the end of the year 1891 by the Syndicate of contractors of joinery and wood flooring. The courses are held from 8 to 10 p.m. at 3 rue de Lutece, 20 rue Falguiére, 236 Faubourg St. Martin, and 105 rue Lemercier. They comprise 4 years of study; 1st year, plane geometry, linear drawing, ordinary joinery sketching, assembling, sale of woods, elements of diseases of trees, defects of woods, etc.: 2nd year, geometry in space, placing of joinery and wooden floors,

measuring, ornamental drawing, and history of joinery; 3rd year, descriptive geometry; 4th year, applied descriptive geometry. Modelling workshops will be opened soon near the schools.

Paper-makers and pasteboard-makers.—A professional school established by the Syndicate of paper and paper-transforming industries, for apprentices and young employees of both sexes in the industries which form the various committees of the syndical paper group, 10 rue de Lancry; separate courses for paper-making apprentices and pasteboard-making apprentices; competitions and prizes.

Upholsterers.—Courses organised by the Syndicate of decorative upholsterers, 3 rue de Lutece. Theoretical and applied courses in geometry, drawing, and cutting of materials.

Carriages.—Technical courses of the Syndicate of carriage makers, 11 avenue des Ternes. Two courses in drawing, viz., drawing of the carriage body and drawing of the mounting.

SECTION 7: VOCATIONAL AND DOMESTIC SCHOOLS FOR GIRLS.

These schools were established with a view to enabling girls to serve both theoretical and practical apprenticeship to a trade whilst completing their primary education. They replace outside apprenticeship, which is always insufficient and often disastrous. The nature and number of the trades taught depends on the district where the schools are situated.

Pupils competing must be at least 13 and not over 15 years of age, but all who hold the certificate of primary studies are permitted to compete from 12 years of age. Girls who have attended for a year the Supplementary Courses of the Primary Schools may be excused from the age limit.

The competitive examinations vary slightly at the various schools. They generally consist of dictation, two problems in arithmetic, a composition of simple kind, an ornamental drawing, and an exercise in ordinary sewing.

The apprenticeship lasts three years, except for those who are learning painting or industrial drawing, which studies require 4 years.

During the entire apprenticeship the pupils are practised in turn on ordinary sewing, and kitchen and household work. They are thus prepared to fulfil the home duties which await them later on.

In all the schools the pupils arrive at 8.30 a.m. and leave at 5.30 p.m. The morning is devoted to general instruction, and the afternoon to vocational instruction.

Besides maintenance scholarships, these are sometimes granted for breakfast and clothing.

Jacquard School.

This School, at 2 rue Bouret, is for girls aged 13 to 15 years on admission. Course three years.

General Courses.—Primary instruction, elements of accounting, drawing, domestic economy, cutting and assembling, cooking and household work, and mending clothes.

Vocational Courses.—Sewing dresses and dressmaking, corsets, underwear, millinery and dress, vests and children's costumes, ladies' jackets, embroidery for furniture and costumes, fancy flowers and feathers, and straw hats.

Breakfast scholarships are granted to a considerable number of pupils.

Our Commission secured some excellent drawings by girls of this School—one of them a portrait in colors, taken from life, exhibiting a recent creation in Parisian gown and hat.

Girls' School at 7 Rue De Poitou.

General Courses.—ethics and civic instruction, French language, arithmetic, elementary principles of the sciences, history and geography, linear and ornamental drawing, ordinary sewing, cutting and assembling, accounting and domestic economy.

Vocational Courses.—commercial studies: writing, accounting, elements of commercial law, English language, stenography, and typewriting; dress and furniture embroidery; embroidery on cloth, cashmere, velvet, satin, etc.; also fancy embroidery; millinery; dressmaking; cutting and making up robes and mantles; industrial drawing; drawing from the cast and from common objects; drawing from nature, flowers, and plants; geometrical drawing (projections, shading, perspective); decorative composition, water color and fans; also painting on earthenware, porcelain, and enamel.

CHAPTER XXXV: SECONDARY TECHNICAL INSTRUCTION.

Before the present Republic was created, technical institutions of the highest order had been established in France, and numerous specialist trade schools were in vigorous operation. These had been created by private enterprise. The following dates may be of interest:—Foundation of Museum of National History, 1793; National Conservatory and Polytechnic, 1794; School of Commerce and Industry, Paris, founded by two merchants in 1820; Central School of Arts and Manufactures, 1829; Philotechnic Association for social improvement as well as industrial training, 1848. Branches of the two latter institutions had been formed in all the chief cities of France, later on being recognized by public decrees.

Trades Unions or Syndicates of workmen increased rapidly after 1830, and worked to raise the standard of arts and crafts which they represented.

The commercial importance of all this activity and improvement of the working classes was shown at the International Exhibition in London in 1851, which drew the attention of the world to the superiority of French manufactures. Progress during the period of the Republic has been marked by the controlling influence of municipalities and the National Government, it being recognized that only these authorities could adequately provide for industrial training of the masses.

SECTION 1: NATIONAL SCHOOLS OF ARTS AND TRADES.

The great body of Arts and Trades Schools belonging to the secondary class were established by corporate bodies—Chambers of Commerce, Trade Syndicates, associations such as the Philotechnic, or private individuals. They are distinguished from the schools of the primary class by many features, of which the most important are:—(1) their narrow specialization; (2) the maturer age of their pupils, who as a rule are persons already working at their trades; (3) the general absence of entrance requirements; (4) their origin and sources of support.

The names of the individual trade schools are a sufficient index of their character, e. g., the technical schools for masons, established by Paris societies of masons and stone cutters; courses for tailors, maintained by the incorporated body of tailors; schools for jewelry manufacture maintained by the jewelry Syndicate. The purpose of all such schools and courses is to perfect workmen in their craft. The instruction is almost always free; indeed, liberality is the impressive feature of this enormous effort on the part of manufacturers, employers of labor, chambers of commerce, and trades unions to maintain the standard of French industrial art and its commercial prestige.

Highly Specialized Technical Schools.

The National Schools of Arts and Trades are highly specialized technical schools with elaborate equipment for workshop practice. Situated respectively at Aix, Angers, Chalons-sur-Marne, Lille and Cluny, each one is easy of access to all the Departments of a large geographical section. A law of 1906 authorized the establishment of a sixth school of this class at Paris, which was opened in 1910. The Government appropriation for the current expenses of these schools amounted in 1910 to $374,696, or 23% of the total appropriation for technical and commercial education.

The schools themselves are under the jurisdiction of the Minister of Commerce and Industry, and under the immediate supervision of the Prefect of the Department in which they are situated.

For some 300 places offered for competition each year, there are no fewer than 1,200 or 1,300 candidates. These schools have all the prestige of government institutions, by which the French parent sets such store. An even more potent source of attraction is the prospect they hold out to all fairly industrious and well-educated students of escaping two years of military service, such dispensation being granted by law to four-fifths of the number of students who at the leaving examination obtain 65% of the total possible marks.

Terms of Admission.

Admission to these schools requires French citizenship, and candidates must be above 15 and below 17 at the time of the competitive examination (1st October of each year). Two examinations are required; one before a jury sitting in the principal town of the Department, the other before a Government Commission appointed by the Minister of Commerce. Admission requirements comprise written composition and oral examinations in orthography, arithmetic, elements of geometry, linear and ornamental drawing, and the four elementary operations of algebra.

Since 1903 it has been obligatory for candidates to possess one of the following: (a) certificate of practical industrial studies; (b) certificate of higher primary studies; (c) 1st class diploma of the Civil Engineering section of La Martiniere School; (d) certificate of secondary studies, bestowed at the end of the first period; (e) diploma granted to third year pupils in the Industrial section of the Eastern Professional School of Nancy.

The candidates must undergo a manual test before the Commission, working, at their option, a piece of iron or wood to conform to a given drawing which is handed to them. The iron test consists, at the choice of the candidate, in adjusting or forging work. A candidate may request to have a test in founding substituted for this work; he must mould his piece in green sand and put it into lead.

In order to be definitely declared admitted, that is to say, fit to follow the theoretical and practical courses of these schools, it is necessary (1) to have received no lower mark than 6 at oral tests; (2) to have obtained for the total

written tests, manual and oral, at least 348 points (three-fifths of maximum). But as each school has only 100 places at its disposal annually, only the first 100 successful candidates can be admitted. These are sent to the school of their Department, but exceptions may be authorized.

Most of the pupils are from the public schools, and belong to the working classes or are the sons of small shopkeepers or Government officials. They are all boarders. The pupil pays $120 annually for full education, board and lodging. For the three years' course $60 more are required for the outfit. In general, however, at least three-fourths of the pupils are in receipt of Government Scholarships, which cover the cost of tuition and living, hence the schools are practically free.

All Manual Preparatory Industrial Schools of Apprenticeship and all other Vocational Higher Primary Schools prepare for these Schools of Arts and Trades, either in a regular way or when the candidates present themselves.

Plan of the Courses.

The school day comprises 3 hours class, 3 hours study, 3 hours in workshop.

1st year: French reading with explanations and French composition; mathematics; advanced algebra; advanced geometry; surveying and levelling; trigonometry, differential calculus; descriptive geometry; physics; chemistry; metalloids; moral and civic education.

2nd year: Geography; French and exercises in composition; elements of industrial accounting; elements of industrial legislation; mathematics; elements of analytic geometry; elements of integral calculus; descriptive geometry and theoretical and applied cinematics; chemistry; metals; metallurgy and elements of organic chemistry.

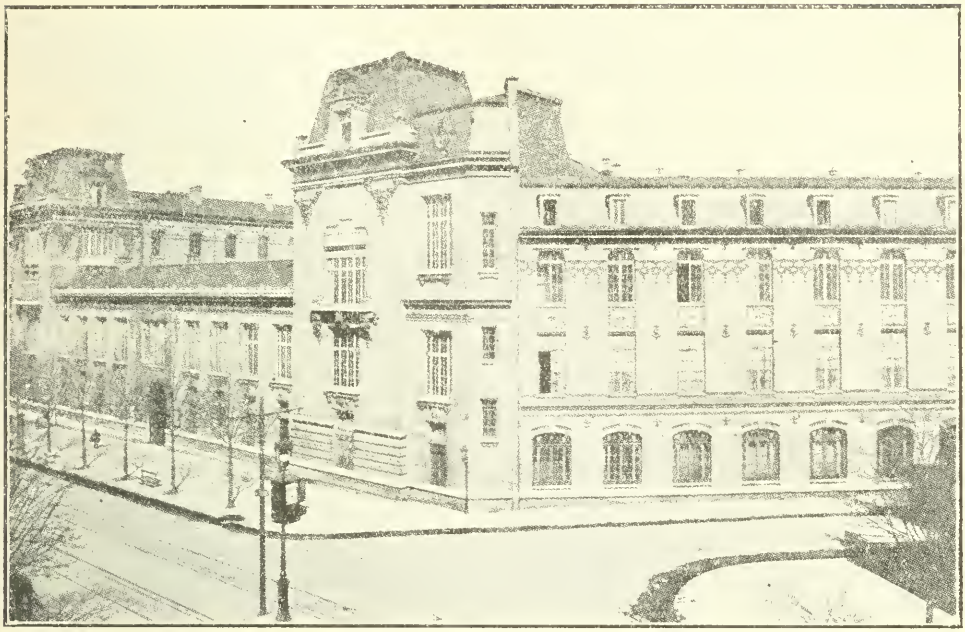
3rd year: History; French; exercises in composition; general mechanics; applied mechanics; machines and motors; industrial physics; electricity; heating and ventilation; lectures on hygiene.

Pupils when leaving may obtain the title of "Engineer of the National Schools of Arts and Trades," established by decree of October 22, 1907, or the diploma of ex-pupil.

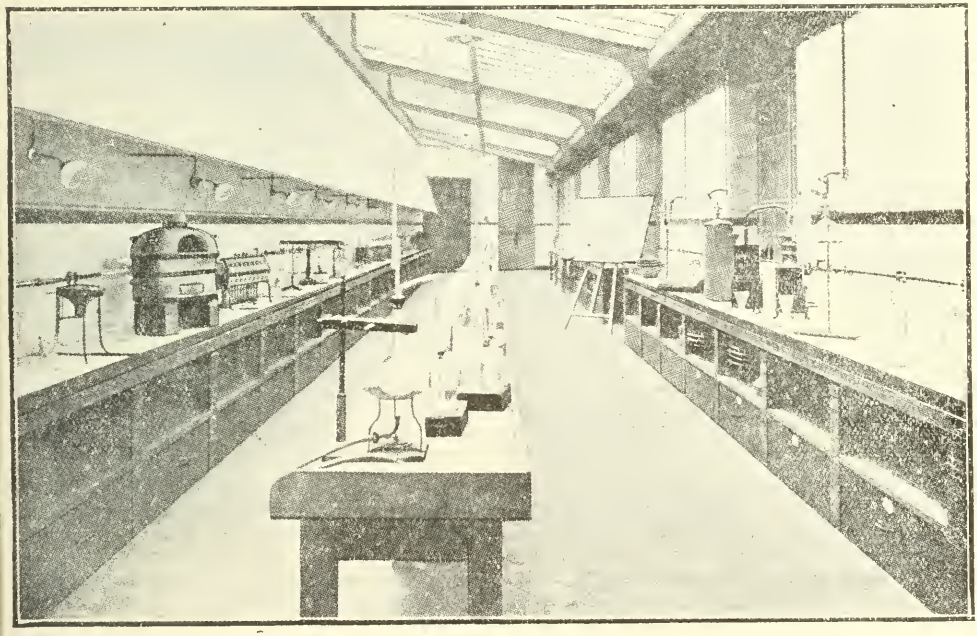
Although these schools have been specially designed to train manufacturers, a large number of other careers are open to ex-pupils, among others railroading, bridge and road building, military engineering and mechanical employment for the Navy, etc. Those who are very good general draftsmen have opportunities of entering the service of large industrial corporations as draftsmen.

SECTION 2: HIGHER PRACTICAL SCHOOL OF COMMERCE AND INDUSTRY.

This School, at 79 Avenue de la République, Paris, is the oldest commercial school in France, founded 1820. It is maintained by the Paris Board of Trade (600,000 francs), the city of Paris (50,000 francs) and students' fees; 170 live



HIGHER PRACTICAL SCHOOL OF COMMERCE AND INDUSTRY, RUE DE LA REPUBLIQUE, PARIS.



LABORATORY.

at the school and pay from 1,200 to 1,400 francs a year; there are also half-boarders who pay 700 francs; others pay 300 francs. Half-boarders arrive at 8 a.m. and leave at 5 p.m. They get breakfast. Any deficit is made up by the Board of Trade. The Directorate is made up of 40 prominent business men and industrial leaders who have been or still are in business. Those in business must belong to the Board of Trade, which has an income of 700,000 francs derived from the various business men who are members, and who are entitled to elect the 40 Directors.

The building cost the Board of Trade 3,000,000 francs, and is now too small.

The School of Commerce.

Boys are admitted from the age of 12. The first stage (3 years) is for boys between 12 and 16, and those who wish to go then into business receive certificates. The second stage (2 years) is for boys of 16 or 17 who wish to get higher commercial training. At the end of the two years they compete for a higher diploma awarded by the Minister of Commerce in person. They may be a little over 18, and are generally 19. Some exceptionally clever boys receive the diploma at 14, but this practice is not encouraged, as it is not considered that their minds have sufficiently matured at that age.

There are 530 pupils, 300 in the first section, 230 in the other. About half of the boys who start at 12 years continue till 16, and the others till 18. The majority of them are certificated Primary School pupils. There is, of course, a special examination in the school.

Second grade pupils generally come from the State Lyceums, where they follow a classical course, but not wishing to complete their studies at the university they come to this commercial school.

The Maritime School.

This school also includes a special superior State School of Maritime Shipping, established six years ago under the auspices of the Minister of Commerce. 20 pupils are admitted annually by special examination, being selected out of 60 or 80 candidates. The school prepares future lieutenants and captains of the commercial marine for deep sea sailing.

The Board of Trade has a sort of proprietary port at D'Ivry on the Seine and derives a revenue from the shipping, like harbour commissioners. They have machinery for loading, unloading and handling goods, also freight shed, etc.

They have also laboratories for testing silk, wine and similar goods, for which a fee is charged. It is a kind of official service, but the duty is assumed by the Board of Trade, whose budget must be laid before the Government, which has authorized the transaction but does not control it.

The School of Navigation.

As the only one of this standing in France, the school has a special grant from the State, which pays the special staff of professors, composed of ex-sea-

captains, engineers, etc. The class-rooms are at their disposal. Young men who attend this school are generally State scholarship holders. Out of 20 pupils, 5 or 6 pay fees. The National State Departments of Commerce and Industry and of Posts and Telegraphs regulate this.

On graduation, pupils are required to spend 5 years in navigation, and then pass another examination before they can command a boat and assume duties as navigators. Their certificate must state that they have been to the school and also served 5 years, and this must be obtained before they are 25 years of age.

The School of Hydrography trains seamen for short fishing voyages to Ireland, Newfoundland, etc.

The Maritime School professors are appointed by the State, and those in the Commercial School are nominated by the Board of Trade on the proposal of the director approved by the Minister.

Evening Classes.

There is a fourth department, consisting of evening classes, founded and maintained by the Board of Trade, for young clerks who desire to improve their knowledge of their own special branch. Students must be at least 15, but the age runs up to 40. These classes are attended by 450 young men and 220 girls.

After one or two years, a special prize is awarded, in the form of a travelling scholarship, entitling the holder to go to England, Germany or Russia. The only condition is that students must go into a distinct line of business of their own speciality; and then when they return they must make a report of what they have seen. For instance, one student in the fur business in Paris went to Russia and studied conditions in a fur house there, and returned with a full report.

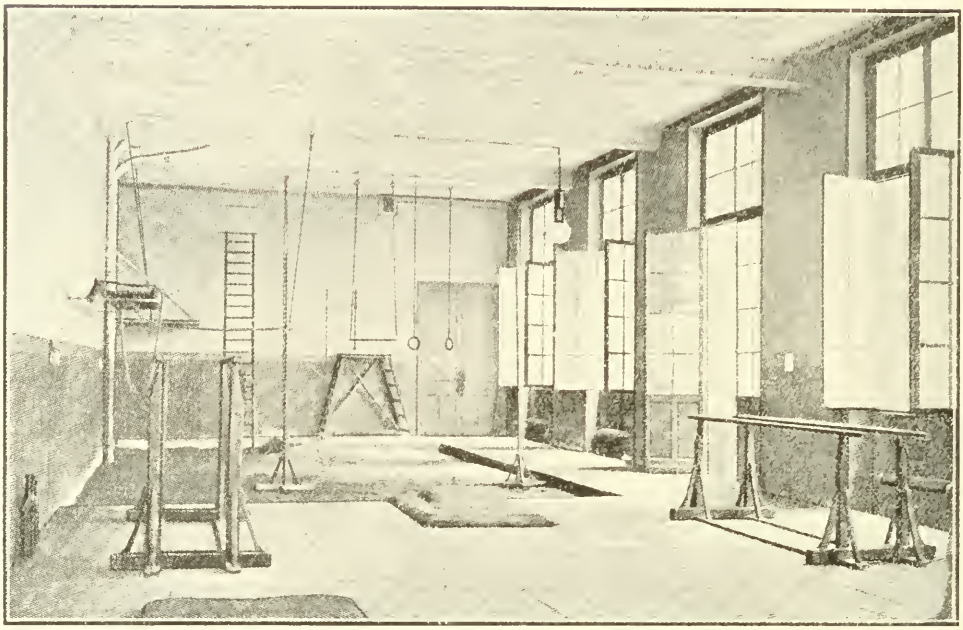
The same system is offered to the second-stage pupils in the commercial school from 16 up. The scholarship comes from different sources; it may come from the State, or from the Council Chamber of the Seine, or from different corporations. Many kinds of scholarships are given to the school in the same way as in the evening classes.

Instruction in the evening is about the same as in the daytime; French, English, German, Spanish, typewriting, stenography, bookkeeping. No comparison can be made between evening students and day students, as the former attend only three times a week.

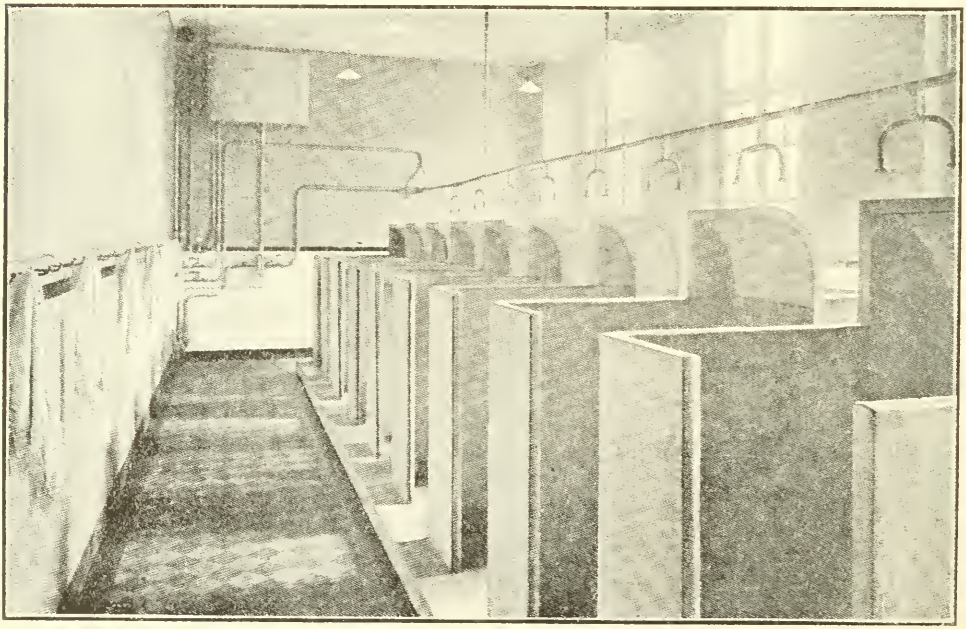
Day pupils are practically boarders in this school. A talented boy attending an evening class for a certain time could acquire about the same amount of instruction as a young man of 16. Of course they have an advantage over day students in that they have practical experience.

Experts as Teachers.

There are two classes of professors:—(1) those who teach geography, etc.; (2) business men who teach their specialty for an hour or two; also expert accountants, railway men, etc., and the government textile inspector, etc. Transporta-



GYMNASIUM



SHOWER BATHS.

tion problems, for instance, are dealt with by an engineer of a leading railway who lectures for 3 or 4 hours a week. In this way the students are kept in touch with industry.

There are complete physical and chemical laboratories.

The drafting room is well finished, with plaster casts arranged around the walls, and well lighted from sides and above.

The dormitories are furnished very plainly, and there is running water in all the rooms, which are divided by partitions extending part of the way up.

Dinner is at noon. 350 eat at each table, these being of marble with plain benches at either side. Billiards, checkers, chess and dominoes are played in the small adjoining room.

There is a preparatory chemical laboratory; gymnasium, etc.

In Paris there are 3 commercial schools like this one, and 15 more are distributed over France. Pupils in all are entitled to pass an examination for bursary, and are selected in competition from all those schools in France; two or three may be chosen in this school and one or two in another place. These scholarships vary from 1,000 francs to 3,000 francs, and run from one to two years.

Visits to Foreign Countries.

During Whitsuntide foreign vacation trips are taken annually by the best students on the list as a reward for special merit. The Director accompanies them and they stay eight days. Last Whitsuntide 18 students went to Belgium and studied business customs.

Students visit different establishments in Paris and make reports.

These visits are made by all the students.

The school has a bureau and permanent secretary for permanently placing students, the expenses being borne by an association of ex-pupils, founded for mutual help. As a general rule all the good pupils are placed in that way.

CHAPTER XXXVI: HIGHEST TECHNICAL INSTRUCTION.

The highest grade of scientific and technical instruction in France is given in special schools, such as the National Conservatory of Arts and Trades, the Polytechnic School, etc. These schools are intended to prepare men for the technical service of the State, or to become directors of enterprises which require both scientific and technical knowledge.

The Higher Technical Schools are under different ministries, viz., the Ministry of Commerce, of Agriculture, of War, etc., according to their courses.

The principal schools of this high order under the Ministry of Commerce and Industry are the following, all situated in Paris:—Central School of Arts and Manufactures, 700 students; National Conservatory of Arts and Trades, 100 pupils; Superior School of Navigation (number of pupils not stated).

Other technical schools, such as the Polytechnic, the Agronomic Institute, etc., are under the Ministries who have charge of their special courses.

A significant fact in the recent history of higher education in France is the multiplication of chairs for scientific branches in the University faculties, and the equipment of laboratories and institutes for the promotion of scientific research and experimentation. As a result of this activity, provision for the highest order of technical training, formerly confined to the special schools located at Paris, is now made, to some extent at least, in all the University centres of the country. For example, at the University of Marseilles there is a Chair of Industrial Physics and another of Industrial Chemistry, and similar Chairs at both the University of Bordeaux and of Nancy. At the University of Lille there is a Chair of Applied Chemistry, and at Lyons, Chairs in Chemistry applied to Industry and to Agriculture. Through this extension of University activities, extreme specialization in the province of Higher Technical Education in France is giving place to the principle of co-ordination and philosophic unity.

SECTION 1: CENTRAL SCHOOL OF ARTS AND MANUFACTURES.

This School, at 1 rue Montgolfier, Paris, is especially intended to train engineers for all branches of industry and for those public works and services whose management does not necessarily come under the charge of the State engineers. It gives a very general course of education, comprising all branches of science connected with the art of engineering, but only as much time is devoted to theory as is necessary for its practical application.

Admission is by examination (fee 20 francs) held annually at Paris in June; candidates must be 17 years of age on the 1st January of the year of competition.

There is no upper age-limit. Foreigners are admitted on the same footing as Frenchmen. No diploma is required. The examination is both written and oral, and comprises the following subjects, the values of which are stated:

Written Compositions.		*Oral Examinations.*	
Trigonometry and Logarithmic Calculus	3	Analytic and Mechanical Geometry	5
Mathematics	5	Arithmetic, Algebra and Trigonometry	5
Physics	2		
Chemistry	2	Elementary and Descriptive Geometry	5
Draft	3	Physics	5
Architectural Drawing	4	Chemistry	5
Machine Drawing	2		
Machine Sketching	2		

Candidates who produce bachelors' diplomas or certificates relating to the first part of the baccalaureate examinations, or diplomas of the National Schools of Arts and Trades, receive a bonus of 15 marks.

Intending students must be well used to machine and architectural drawing and aquatint, and in studying drawing must apply themselves equally to the attainment of rapidity of execution, exactitude of form and purity of touch. They are advised to practise reproduction of drawings given at previous entrance examinations of this school, and machine drawings given at the School of Arts and Trades, as many candidates fail at shadow tracing. When presenting himself for examination, each candidate must hand in collections of drafts, machine and architectural drawings, and freehand sketches.

The number of pupils admitted annually averages from 230 to 250.

Discipline, Fees, etc.

This school accepts day scholars only, and does not exercise any supervision over them outside of school hours; but this does not militate against their satisfactory progress, the importance and frequency of examinations and competitions being sufficient to insure discipline and prevent pupils from neglecting their lessons. The course runs for three years, during which time those not profiting by instruction are expelled.

The tuition fee, including cost of experiments, is 900 francs for first year, 1,000 for each following year. The entire cost of supplies and drawing material must be defrayed by pupils. Tuition and maintenance expenses are estimated at 3,000 francs a year, and parents are advised to allow their sons more. French pupils who cannot meet these expenses, and who are among the first 120 on the list, may obtain subsidies from State funds; these are originally granted for one year, and may be renewed and combined with those allowed by Departments and Communes, which are often given. Notably the City of Paris assists a large number of pupils. The Department of the Seine has voted a subsidy of 3,000 francs, available only to pupils domiciled in the Department and outside of Paris.

The State subsidies distributed among the pupils in 1908 were 50,000 francs; these usually equal half the tuition fee; the allowance may be a little

larger in the second and third years if the pupil has gained a place. In 1908–9 9 scholarships were given at 200 francs, 24 at 300, 20 at 400, 30 at 500, 12 at 600, 12 at 700, and 3 at 800.

The State also grants for graduates of the National Schools of Arts and Trades a subsidy of 30,000 francs, divided equally between preparation of pupils for the Central School and the maintenance of those admitted.

Course.

The course of instruction is as follows:

1st year.—Analysis (differential calculus and integral calculus), general mechanics, thermo-dynamics, descriptive geometry and its applications (shadows, stonecutting and timber-work), general physics and chemistry, mineralogy and geology, elementary and civil construction, and hygiene and applied natural sciences.

2nd year.—Theoretical and applied resistance of materials, construction and erection of machines, metallic constructions, industrial physics, applications of electricity and light, steam engines, analytic chemistry, chemical technology, architectural and civil constructions, and industrial legislation and economy.

3rd year.—Applied mechanics (hydraulics), construction and erection of machines, industrial chemistry, general metallurgy and metallurgy of iron, mining, public works, and railways.

These varied studies are completed by exercises and manipulations carried on at the school, by operations on the ground, and by visits to the factories and workshops. The pupils must make numerous plans, with documentary memoranda, of the following objects: metal bridges, steam engines, civil constructions, machine-tools, etc. (2d year). Manufactories of chemical products, machine construction workshops, locomotives, blowing machines, hydraulic establishments, etc. (3d year).

At the end of the 2d year the pupils specialise in one of the 4 following branches: machinists, constructors, metallurgical miners, and chemists. The courses are open to all the pupils, only the work and practical exercises and the plans to be made differing according to the specialties; but since 1900 the diploma no longer bears the mark of a specialty.

Building and Equipment.

The building has been admirably laid out to answer all the requirements of such a varied curriculum. It comprises 60 study halls, 3 amphitheatres, laboratories, galleries of collections (drawings, models and apparatus), and an extensive library. It distributes among the pupils of each division the school Portfolio, an album lithographed every year containing the most notable drawings brought in by the pupils from their vacation trips. This vacation work is obligatory, and note is taken of it in the graduation classification.

A system of weekly examinations serves to keep pupils always on the alert, and makes it possible to ascertain their progress at any time. The marks obtained

at these examinations, as well as those for plans, vacation work, general examinations and the final competition, serve to make up the graduation classification. The final competition consists in the execution of a general plan and the composition of a memorandum in support of it. The pupil has 30 days in which to compose this plan, and is obliged to present it and discuss his work personally before the examining jury.

The diploma of Engineer of Arts and Manufactures is granted to those pupils who obtain a total average of 14.

To obtain the diploma pupils must pay 100 francs, 50 of which are refunded in case of failure. Those who so fail, but prove that they are adequately instructed (the average required being 13) receive a "certificate of capacity," and they may compete a second time for the diploma within 5 years. In 1908 graduating pupils received 224 diplomas and 14 certificates; ex-pupils re-admitted to the examination, 6 diplomas.

The careers open to graduates are as numerous as their acquirements are varied. Besides the openings which they find in business, as engineers, superintendents of mills, heads of works and factories, constructors, etc., they may become professors of applied science, etc. Pupils who pass out high are in demand in business, and many have positions guaranteed to them in advance by relatives or others; those who have neither fortune nor relatives, though sometimes finding difficulty at the outset, always succeed in finding positions eventually.

A certificated pupil, unless he has exceedingly bad luck, always finds a good position. Salaries of 4000, 5000 and even 10,000 francs are quite frequently obtained by graduate engineers of a certain standing, and much more brilliant positions are by no means rare.

The State, which has so many employments at its disposal which Engineers of Arts and Manufactures would be quite well fitted to fill, does not definitely place any of them at the disposal of graduates.

SECTION 2: NATIONAL CONSERVATORY OF ARTS AND TRADES.

This is both an industrial museum and an educational institution under the Department of Commerce and Industry at 292 rue St. Martin, Paris. It is of the greatest service as a museum and high school of science applied to industry, and contributes in a great measure to the progress and popularisation of industrial questions.

The financial law of April 13, 1900, invested it with a civil character, and gave it an administrative council. The law of July 9, 1901, and various decrees reorganised and completed it by the establishment of (1) laboratory for mechanical, physical, chemical, and machinery experiments; (2) a "national office of industrial property," patents of invention and trade-marks; (3) a museum of industrial hygiene, and for the prevention of accidents among workmen.

These new institutions are productive of excellent results in the industrial world.

The administrative council and the director are assisted by an advisory council of instruction and by three technical committees for the departments named.

The Experimental Laboratory undertakes for manufacturers, merchants and private individuals, all kinds of tests and standardizing with reference to physics (except electricity and magnetism), metals, building materials, machines, and new or insufficiently known vegetable raw materials. There is a charge for these tests, the results of which are entered in reports or certificates of standardizing which are sent to the public.

The Museum contains full and valuable collections of scientific instruments, models of machines and objects of art given by inventors or manufacturers, or purchased by the institution. All arts and sciences applied to industry are liberally represented; physics and mechanics, geometry, weights and measures, geodesy, topography, clock-making and astronomy, building arts, hygiene, social economy, agriculture and country engineering, apparatus for transportation and railways, mine working, metallurgy and metal working, lighting and heating, chemical products, glassware, pottery, spinning and weaving, printing, engraving, photography, etc. The public is admitted to the exhibition galleries of the Conservatory every day except Mondays and Fridays.

The Library contains a fine collection of over 40,000 volumes and 2,000 maps relating to the sciences, the arts, agriculture and industry. It is open during the week, Mondays excepted.

Instruction.

The Conservatory gives oral as well as visual instruction. There are 22 professorships, all filled by celebrated men. In 15 of these are taught the sciences applied to the arts, and art applied to the trades; in the others, political and industrial economy, social economy, social insurance and provision, commercial law, industrial and commercial geography, industrial hygiene and the regulation of workmen's associations.

These courses are to the industrial sciences what those at the College of France are to pure science. The professors keep track of all the latest industrial changes, and explain the most recent improvements. The courses run from two to three years.

The instruction, although of a scientific and advanced character, is none the less entirely practical, and adapted to the various classes of students.

The instruction can be followed, with the same advantage although not at the same level, in a class attended principally by constructors of bridges and roadways who intend to become engineers, or at a course attended by numerous foremen or workmen sent by their employers, as well as by heads of factories in Paris and the suburbs, and also by engineers. The course in agriculture may be followed by a great number of agricultural proprietors spending the winter in Paris, whilst that in agricultural chemistry is by its nature accessible only to a very small number of those admitted.

As the instruction is intended especially for those engaged in business or industrial pursuits during the day, the lessons are given in evenings from Novem-

ber till April. All courses are held twice a week, excepting those in commercial law, industrial and commercial geography, and social economy and hygiene, which are held only once a week. Classes are free to the public.

Certificates are given at the end of the year, the standing of candidates being ascertained by estimating the marks earned on the sheets, the drawings and designs executed, and work done in the professor's laboratory, the total marks required being 14.

Candidates for all the annual certificates, relating to the full period of at least two courses which are complementary and have the same industrial or professional aim in view, may obtain the diploma of studies of the Conservatory by passing another general examination.

In 1907-1908 the courses were attended by 1,695 persons. Of this number 224 asked permission to take the examination. Some of them already held as many as five certificates.

Public Lectures are given on Sunday afternoons during the winter by scholars or eminent men in any branch of the sciences or applied arts, whom the public are interested in hearing in order to keep themselves informed of present day matters and of questions which cannot be treated in detail in the Conservatory courses.

The National Office of Industrial Property was instituted by the law of July 9, 1901, which transferred to the Conservatory the industrial property service formerly located at the Department of Commerce. This office, established to meet the desire of the International Convention of March 20, 1883, for protection of industrial property, groups together in the central business district the offices of unexpired and lapsed patents and the central trade-mark depot. The connecting halls of French and foreign patents of invention, and also that of trade-marks, are open daily, except Sundays and holidays.

The Museum of Industrial Hygiene, and for the Prevention of Accidents among Workmen was established at the request of the Association of French Manufacturers by decree of September 24, 1904. It is destined to be of great service to the working classes by diminishing the number of accidents, and by aiding the labor inspectors in the accomplishment of their useful mission.

The museum constitutes a permanent exhibition, which is continually being renewed, and presents to the public as complete a collection as possible of protective apparatus and of the most practical and most improved devices for safety and industrial hygiene.

SECTION 3: SCHOOL OF INDUSTRIAL CHEMISTRY OF LYONS.

(Chemical Institute of the University.)

This school, founded in 1883 as an annex of the faculty of sciences, is patronized by the Board of Trade and is intended to train, for industrial arts, young men who have experience in the theory and practice of chemistry.

Pupils are admitted by competition held in November. Candidates must be of the full age of 16 years and possess the general attainments necessary to enable them to profit by serious chemical studies, but holders of bachelor's degrees are admitted without competition in proportion of one-half of the places available.

The competition consists of a French composition; written examination in elementary mathematics (arithmetic, algebra and geometry); written examination in elementary physics and chemistry; questions in mathematics, physics and chemistry. All the above subjects are obligatory. Candidates may also take sciences and modern languages as optional subjects, and thus increase the number of their marks by one-quarter of the maximum given for obligatory subjects. Those who possess qualifications or diplomas receive also an advantage in marks.

The school also admits outside pupils who take part in all the exercises and may be permitted to compete for the title of Engineering Chemist of the School.

Course of studies is 3 years, beginning annually in November and ending in July, and comprises both theoretical courses and laboratory work.

Courses and Laboratory Work.

Theoretical Courses:—

1st year: Mineral, organic and industrial chemistry, mineralogy or industrial physics, photography, German.

2nd year: Organic, industrial and electro-chemistry, industrial physics or mineralogy, German.

3rd year: Organic and industrial chemistry, chemical technology, German.

The German course is intended to train pupils to translate German scientific works.

Laboratory Work:—

1st year: Mineral chemistry.

2nd year: Organic chemistry and electro-chemistry.

3rd year: Applied chemistry, textiles, coloring materials, essences and perfumes, oleaginous bodies, chemical metallurgy, and alimentary substances.

The pupils work in the laboratory from 35 to 40 hours a week. Analyses and preparations alternate from week to week, and are held under the direction of experienced masters, who train the pupils to work with care and precision.

The pupils are students of the faculty of sciences, and as such are registered at the faculty. They must be at school from 8 to 11-30 a.m. and 1-30 to 6 p.m.

The annual fee is 800 francs. Students must also deposit 100 francs as security against loss or breakage. The Department of the Rhone, the City, and the Lyons Board of Trade grant a certain number of studentships for the benefit of poor students.

Diplomas and Promotions.

At the end of the third year, after a final examination, students receive the diploma of Engineering Chemist or a certificate of studies. Since 1907 this diploma has only been granted to those who obtained the certificate of higher studies or the diploma of technical studies in industrial chemistry before the faculty.

Pupils who have distinguished themselves in these three years of studies may receive permission to spend two more years at the school as private tutors or pupils, and to continue their work under the direction of the head professor and his assistants, and make original investigations of problems of pure science or industrial chemistry in private laboratories.

All graduates up to the present have found positions without difficulty in various industries in France and elsewhere in connection with storage batteries, dressings, rubber, limes and cements, glue and gelatine, distilleries, cyanides, electricity, electro-chemistry, fertilizers and agricultural chemistry, purification of water, explosives, tinctorial and tanning extracts, illuminating gas, oils and soaps, printing on stuffs, coloring matters, tanneries, curriers' shops, patent leathers, metallurgy, paper, pasteboard, chemical products, photographic products, pharmaceutic products, fireproof products, sugar refineries, sugar houses, stearin factories, dyeing, oilcloths, varnish, vinegar, and the laboratories of industrial analysis, agriculture, customs, railways, State, municipal, etc.

SECTION 4: CENTRAL SCHOOL OF LYONS.

This school at 16 rue Chevreul is under the patronage of the Board of Trade, and is designed to train technicians as civil engineers and factory superintendents. The course takes three years, with an optional fourth year for those who desire to specialize either in electro-technics and applied mechanics or in civil construction and public works.

The entrance examinations are held in July and October. Candidates must be of full age of 16, and file certificates of birth and good conduct. There are three written examinations:—mathematics, physics and chemistry, drawing. The oral examinations bear on elementary arithmetic, geometry and algebra, descriptive geometry, rectilineal trigonometry, elements of physics and of chemistry. Candidates who hold a degree of Bachelor of Science are examined in drawing only, and must obtain 11 marks. Candidates may be admitted direct to the second year of studies; then they undergo an examination bearing on the subjects of the first year.

The students are half boarders, taking their midday meal at the school. The annual school fee is 700 francs, besides 10 francs for use of library, from 80 to 90 francs for school supplies, and cost of breakfast about 150 francs Pupils from outside Lyons are placed in desirable private houses. Full or partial scholarships may be granted by the Board of Trade, the Department, and the City.

Courses.

The education is divided as follows:—

First year: Mathematics (algebra, analytic geometry, statics, surveying, descriptive geometry), physics, mineral chemistry, mineralogy, elements of technology.

Second Year: Differential and integral calculus, rational and applied mechanics, descriptive geometry, industrial physics, electricity, organic chemistry, geology, metallurgy of iron and steel, graphic statics, technology.

Third Year: Machine construction, hydraulics, resistance of materials, steam engines, civil construction, chemical analysis, public works, railways (construction and operation), general electro-technics, electric measurements, industrial legislation, industrial hygiene.

There are special studies in drawing, comprising:—1st year, freehand sketching executed at the workshops, aquatint, projections, architectural and topographic drawing; 2d year, drawing from plans, sketches to scale, etc.; 3d year, designs of machines, of factories and of various constructions.

In the fourth year the pupils are divided into two sections and follow the courses common to both sections, together with advanced special courses.

Training in Manual Work.

All pupils are trained in manual work, consisting of joinery, forging, adjusting, and machine-tools in the school workshops. They make frequent visits to factories, and thus become initiated more directly into industrial matters by studying the machines and by contact with the workshops.

A system of weekly examinations is in vogue, and the marks obtained thereat added to those obtained at the examinations at the end of the year and at the final examinations, serve for promotion to the higher division, and also for classification when graduating.

A first-class diploma is granted to pupils who obtain a total average of at least 15; second-class diploma to those who obtain 13. Such diplomas confer the title of "probationary engineers."

Former pupils who hold a diploma of the school may, after a certain time, obtain another conferring the title of "Engineer of the Central School of Lyons" by fulfilling certain conditions.

Graduates find positions without difficulty in industrial establishments, especially local ones; and this is facilitated by the good offices of ex-pupils, who have formed themselves into a friendly society.

By agreement between the school and Board of Trade, pupils who during their 4th year make a specialty of the study of civil construction and public works may at the same time attend the colonial courses founded by the Board, and upon graduation readily find situations either in the Far East or in Arabic-speaking countries.

SECTION 5: ELECTRO-TECHNICAL INSTITUTE OF GRENOBLE.

The Electro-technical Institute of the University of Grenoble was organized so as to be (1) an electro-technical school where all grades of theoretical and practical instruction in industrial electricity are given; (2) a testing bureau for verification and control of all ordinary electrical apparatus; and (3) an investigating laboratory, fitted for the advancement of electric science.

By its advantageous situation in the "white coal country", close to the most numerous and important French electric installations, this Institute offers students the advantage of being a centre of information and practical studies of the highest order, especially in what concerns hydro-electrical stations with high and low falls, the electric conveyance of energy from very high tensions, and electro-chemistry.

Courses.

The instruction given comprises: (1) courses and lectures on all subjects relating to the industrial production and utilization of electric energy, chemistry, electro-chemistry, electro-metallurgy, and industrial mechanics and physics; (2) practical workshop and laboratory work with reference to ordinary electric measurements, comprising the handling and placing of all ordinary electric apparatus; (3) exercises in making out plans and specifications of electric installations of all kinds; (4) visits to electric works and installations at Grenoble and vicinity; (5) exercises in running machines and serving part-time in the electric stations.

Admission to the lectures and practical work is reserved for students of industrial electricity proper, who must pass an examination of fitness consisting of:—(1) questions in arithmetic, algebra, geometry, trigonometry, ordinary mechanics, general physics, electricity and magnetism, chemistry, according to the educational programme given in the classes of higher mathematics in the lyceums to prepare for the Central School; (2) a test in industrial drawing and in a numerical calculation. The student must also be entered in the registers of the faculty of sciences and pay the fees for practical work.

Annual Expense to Students.

The estimated annual expenses of students of industrial electricity are:—University fees: enrolment 30 francs, practical work 300 francs, examination 30 francs; school material and cost of electro-technic excursions 130 francs; cost of stay at Grenoble (9 months at 90 francs) 810 francs; total 1,300 francs. The problem of living is very much simplified for the students by the good offices of the Committee f Patronage of foreign students which acts as intermediary for several hundreds of students of various nationalities every year.

The studies at the Institute last two years; one year (A) being devoted to a study of the industrial production and utilization of electric energy by

continuous currents, hydraulic machines, and related problems; and one year (B) to a study of the production and utilization of electric energy by *alternating currents*, steam engines, and related problems..

Each year ends with an examination which includes:—(1) a written test (duration 10 hours) comprising the composition of a draft of an electric installation, with plans and specifications; (2) a practical test (duration 10 hours) comprising the execution of laboratory work; and (3) an oral test (duration 1 hour) consisting of questions on the fundamental elements of industrial electro-technics, mechanics, chemistry, and physics.

Candidates who are put off in July may present themselves in November.

Students who have successfully passed the two final examinations at the end of (A) and (B) receive the diploma of *Electrical Engineer* or a *Certificate of Electro-technical Studies*, according as the average of their examination and study marks is between 15 and 20 or between 10 and 15.

Students who matriculate and have followed with advantage the instruction given at the Institute may easily obtain the certificates of higher studies in industrial physics and electro-chemistry, which, when added to another certificate of higher studies, entitles to the degree of Licentiate.

Diploma of Electrical Engineers.

Engineers who hold diplomas of the large French or foreign schools, and technicians whose acquirements are considered sufficient, may be admitted by the dean as candidates for the diploma of Electrical Engineer on the proposal of the director of the Institute, after an examination of their claims and within the limit of places available at the laboratory. For the students in this category the curriculum comprises only two half-years of supplementary studies at the Institute (from November 15 to July 14 following).

The final examination comprises: (1) a written test consisting of a draft of an electric installation, with plans and specification; (2) a practical test consisting of personal researches made in a subject given beforehand; and (3) an oral test in theoretical and practical electro-technics.

The fees are:—registration 20 francs; library 10; laboratory 125 per quarter; examination 30; total 560 francs.

A special section is reserved for ex-pupils who hold diplomas from the Schools of Arts and Trades.

An elementary division, for which the entrance examination corresponds to the instruction given in the Higher Primary Schools, in the Practical Schools of Commerce and Industry, or in the 4th B class in the Lyceums, enables young persons under 16 years of age who are candidates for ordinary electrical *engineer's certificates*, to acquire in one year knowledge corresponding to this first degree of practical electric science. The fees for practical work in this elementary division are 200 francs.

CHAPTER XXXVII: DRAWING DESIGN AND ART.

Instruction in Drawing in France.

Instruction in drawing of some sort is commenced even at the Kindergarten, where it precedes instruction in writing. It is completed in the elementary Primary Schools, and reaches a rather considerable development in the Higher Primary Schools.

As the Higher Primary School is open to only a small number of selected pupils, the city of Paris, which appreciates the fact that drawing is the basis of all vocational instruction, has opened in a certain number of public schools free evening classes in drawing and modelling, intended for apprentices and male adults.

Geometrical drawing in all its applications is taught in these classes, also machine drawing, architectural drawing, cutting of material and tinting; drawing at sight (ornamental and figure) executed from high and low relief, plants, and the living model; also modelling and sculpture.

The courses are open every evening except Saturday, from 8 to 10 p.m., from October 1st to June 30 at 40 different schools.

What Paris is Doing.

Up to the present time the city of Paris has established only five courses in drawing for girls. Other classes are in contemplation; but in the meantime the city subsidizes 10 private schools of drawing, on the understanding that they receive a certain number of pupils free of charge. As the instruction in drawing given in these establishments is of a rather general and theoretical character, the city thought proper to complete it by instruction that had more especially in view the applications of the arts of drawing. For this purpose, Paris founded in 1883, two new schools, one for preparatory practical drawing, the other for the application of the arts of drawing to a certain number of industries, of which mention is made further on.

At the same time it founded 5 evening courses where drawing applied to art and industries is taught. These courses are held every evening except Saturday.

Modelling, anatomy, decorative composition and geometrical drawing are taught. Pupils are admitted only after having passed an entrance examination.

SECTION 1: SCHOOLS OF DRAWING.

The study of drawing, formerly considered only from the purely artistic point of view, has considerably widened its scope, so that a knowledge of drawing is of the utmost importance in many occupations. The artist must of course be

a most skilful draftsman, and the architect or engineer, whose art is essentially mathematical, must have constant recourse to drawing. But in order to appreciate the full importance of drawing we must bear in mind that departments such as railways, surveying, forests, bridges and roadways, mines, military engineering, etc., require vast numbers of draftsmen, and that numerous industries, such as calicoes, painted paper, material for hangings, printing on cloth, porcelain, goldsmiths' ware, etc., are continually in need of special draftsmen and skilled artists and designers.

Special Schools Essential.

In order to satisfy such numerous requirements, it was found necessary to establish special schools devoted to drawing; and even in the programs both of primary and secondary education a rather prominent place had to be given to the teaching of elementary drawing, preparatory to the more extensive study of the art. It is found to be an excellent subject, and of great practical utility even for the pupil who does not intend to follow the draftsman's occupation.

The rudiments of drawing which pupils acquire are extended and completed when they reach the larger schools —the Central School, the Polytechnic School, the School of Bridges and Roadways, the School of Mines, etc.

In the School of Arts and Trades the teaching of drawing is very comprehensive, and has special reference to its applications to arts and manufactures, and particularly to mechanical manufacturing. In the schools of Industrial Drawing, which resemble those of Arts and Trades, draftsmen are trained specially for the various industries, especially for art industries.

Finally, advanced instruction in drawing and in all branches related to it is given in special schools devoted to Fine Arts and Decorative Arts.

State Subsidies for Drawing and Art.

There are numerous schools of drawing in France, the majority of which are subsidized by the State; but although the State exercises control over the teaching, it is far from being uniform, and the programs vary according to the needs of the particular locality or the requirements of the local industries. They admit of applications of drawing to fine arts, to decorative art, or to industrial art.

The instruction is divided into three classes, and comprises generally:

(1) Elementary class,—freehand drawing at the blackboard and on paper, and linear drawing.

(2) Intermediate class,—ornamental drawing and drawing of portions of figures, the practical study of projections (sketches, elevations of plans, levelling, etc.)

(3) Advanced class,—drawing from the figure; general history of art; study of the orders and laws; decorative composition; the application of projections to carpentry, locksmithery, stone-cutting, etc.

There are local and municipal Schools of Fine Arts which are subsidized by the State. Their programs, though of the same nature as those of the National

Schools of Fine Arts, are usually less complete. In each of them one part is devoted to the industrial application of art, and particularly to decorative art. These modifications in the programs of the National Schools are dictated only by the needs of the local industries.

Local schools of Fine Arts are established at Amiens, Clermont-Ferrand, Montpellier, Nancy, Rennes, Rouen, St. Etienne and Tours. The municipal schools are those of Angers, Avignon, Caen, Grenoble, LeHavre, Lille and Poitiers.

Some of these local and municipal schools are more important than the majority of the National Schools, this difference being due to the fact that the income is administered in the National Schools by the State, but in the others by the cities under the control of the State.

The School of Fine Arts at Toulouse, which was formerly administered by the city, has become a National School.

Local and National Schools.

In addition to these Schools of Fine Arts supported or subsidized by the State, there are others, such as those at Bordeaux, Besançon and Marseilles, where the instruction is of the same character, and those at Dunkerque and Tourcoing (with a course in architecture) and at Toulon (studio of fine arts), which are sufficiently prosperous to do without the aid of the State. The same remark applies to the School of Sculpture at Grenoble.

The organization and teaching at the Schools of Decorative Art in the Departments (Provinces) have been copied from the National School of Decorative Arts at Paris, the artistic training of which has profoundly affected French industries. These schools have the common object of cultivating the taste and completing the industrial education of workmen and artisans by teaching drawing and the allied arts. Each school covers special instruction adapted to the occupations of the pupils. They are for day scholars. Pupils who are minors, and are introduced by their parents or employers, must know reading writing and arithmetic. Foreigners may be admitted by special permission. The instruction is free, and pupils of both sexes are received.

National Schools of Fine Arts.

The National Schools of Fine Arts of the Departments, five in number, situated at Lyons, Algiers, Bourges, Dijon and Toulouse, impart a knowledge of drawing and the kindred arts of painting, sculpture, engraving, architecture, etc. At all these schools the instruction is free; the pupils are day scholars, and must be introduced by parents or employers, if minors, and be able to read, write and figure. Maintenance scholarships may be granted to pupils who have not sufficient means. These scholarships, which may be divided, are furnished either by the Departments (Provinces) or the communes (city or village).

In the Departments (Provinces) there is very little difference between the schools of fine arts, of decorative arts, and of industrial arts. This is not so at Paris, where the National School of Fine Arts aims to give the highest artistic

instruction possible, and this is imparted by the greatest artists of France. The exceptional importance of the School of Fine Arts (the famous Ecole des Beaux Arts) at Paris requires separate mention.

MUNICIPAL SCHOOLS OF DRAWING.

Examples of this class of school may be given by referring to those at Lyons. These schools were organized under the same law of December 2, 1876, which established the Ecole des Beaux Arts. There are 4 evening schools for male adults, situated in different parts of the city, in which classes are held usually on three evenings weekly, the fee being 3 francs.

In the *Petit-College School* the program comprises: (a) elementary courses covering the principles of geometrical drawing, perspective, casts and ornaments; (b) industrial linear drawing applied to constructions and machines, architecture, and elements of geometry and perspective; (c) higher course from casts, heads and classical subjects; (d) modelling; (f) drawing of flowers from nature, and conventionalizing; (g) decorative art applied to industry.

In the *De la Guillotiere School* the teaching comprises; (a) higher course of figure drawing from the cast; (b) higher course of ornamental drawing from the cast, with application to decorative arts; (c) higher course of modeling, figure and ornament, with applications to decorative arts; (d) drawing in its various applications—first section, linear industrial drawing, perspective, shading, water colors from relief models; second section, application of decorative art to architecture and various industries; (e) preparatory course to the preceding courses, comprising geometrical drawing, perspective, shading and water color, linear and ornamental drawing.

Des Brotteaux School,—The program comprises: (a) course of drawing from the cast, and modeling; (b) linear drawing, geometry, stone-cutting and water colors; elements of architecture, industrial drawing applied to construc-drawn from nature; (c) art composition applied to Industry.

De la Croix-Rousse Schools,—The program comprises: (a) course on principles; (b) drawing from the cast, classical; (c) flowers from nature; (d) conventionalizing and application to industry; (e) higher course of ornamental drawing; (f) decorative art, composition and study of styles; (g) linear and mechanical drawing; drawing applied to various industries.

There are two schools for women and girls, as follows:—

Rue de l'Hotel de Ville School,—a drawing school whose program comprises: (a) drawing from the figure (head); (b) ornament from the cast; application of ornament to decoration of objects; (c) special flower course—study of flowers from nature in crayon and water color, with application to industrial arts; (d) elementary composition and style; (e) course on principles; (f) special drawing course on Thursdays; (g) preparatory courses, optional, for examinations as professors or for the Ecole des Beaux Arts. Classes meet in the afternoons for three or four hours; preparatory courses one or two hours.

Municipal Course in Embroidery (artistic hand embroidery); The course lasts 4 years, and comprises the study of various stitches and embroideries of different periods and their applications. Girls of over 14 are admitted who are attending or have attended the Municipal School of Drawing, or who have the necessary knowledge of drawing. The courses are held in the afternoons.

MUNICIPAL PREPARATORY SCHOOL OF PRACTICAL DRAWING, PARIS.

(Germain Pilon School, 12 rue Ste. Elizabeth.)

This school prepares young men to become draftsmen or industrial modelers.

It instructs pupils in drawing, modeling, and molding, not only from the theoretical but also from the practical point of view, with reference to the following specialties: jewelry, goldsmith's art, furniture, painted papers, ceramics, embroidery, lace, lace-making, mosaic, and ironmongery.

The program comprises drawing and modeling from the cast and the living model, watercolor from nature, geometrical drawing, tinting and the theory of shading, perspective, elementary architecture, analysis of styles and decorative composition, anatomy, history of art, designing stuffs and furniture, embroidery and lace making, technological lectures, and practical exercises in molding.

The course takes three years. Instruction is free. Maintenance scholarships may be granted, beginning with the second year. The classes are held from 8 to 11 a.m. and 1 to 5 p.m. Candidates are admitted by competition in June. Candidates must be French, living at Paris or in the Department of the Seine, 13 years of age, if provided with the certificate of studies; otherwise 14.

The competition comprises: drawing an ordinary object of a simple shape, geometrically and in perspective; also French composition.

Evening classes bearing on the program of the school are held during the school year, from October to June 30, from 8 to 10 p.m. daily (except Saturdays and Sundays).

Evening pupils must be at least 15 years of age.

SECTION 2: OTHER SCHOOLS OF DRAWING AND ARTS.

(1) ST. ETIENNE DISTRICT SCHOOL OF INDUSTRIAL ARTS.

This school was established in 1804. It is under the direction of the Minister of Public Instruction and Fine Arts, and is subject to the inspection of his delegates. The staff is appointed by the Prefect of the Department (Loire), on the nomination of the mayor, subject to the approval of the Ministry of Fine Arts. The school is a municipal institution, deriving the great part of its funds from the city. It is under the authority of a director, who receives instructions from a special Council of Improvement.

Students must be not under 12 years old, and of French nationality. Foreigners can be admitted only by special permission of the Prefect.

Some former students have gone to the Ecole des Beaux Arts at Paris, others to the Ecole des Beaux Arts at Lyons, and to the Preparatory School of Architecture at Lyons.

The average number of pupils is 450. There is no definite limit to the course, which sometimes extends over five years.

Evening courses in drawing applied to industry are largely attended by apprentices and others.

Pupils wishing to take up art as a profession go on to the schools at Lyons or Paris after a few years here.

Courses Related to Local Industries.

There are 25 Courses, viz.: 6 in drawing; 6 special courses in elementary and descriptive geometry, perspective, anatomy, history of art, mechanics and geometrical drawing; 13 applied courses covering decorative composition, modeling, architecture, engraving of weapons, incrustation, carving and repoussé, engraving with the hammer, chisel and liquid, mounting on cards and weaving.

The school devotes much of its work to two very old and important industries carried on in St. Etienne, viz. fire-arms and ribbons. Working drawings of ribbon patterns designed from plants are composed by pupils. The fire-arms are engraved, some of the work being executed on the weapons themselves, while others are designed separately. Sometimes the metal is decorated, sometimes the wood.

Few of the pupils turn out full-fledged artists, but they are good engravers on wood and metal, and could be sent to Paris to finish their training.

(2) SCHOOL OF DRAWING AND ART APPLIED TO THE INDUSTRIES, PARIS.

This is a free day school at 24 rue Duperre, intended to train not only skilful industrial draftsmen, but also art workers in the special lines which can be carried on by women.

It comprises elementary and advanced divisions, the instruction in each being both theoretical and vocational. The course is three years. The sessions are held from 8.30 to 11.30 a.m. and 1 to 5.30 p.m.

Elementary Division.—Theoretical instruction comprises: the French language, moral and common law, history and general geography, arithmetic, ordinary geometry, elements of the physical and natural sciences (physics, chemistry, botany, zoology, and physiology); elements of hygiene, of domestic economy, of technology, of art history, and of ornamental composition; and application of geometrical drawing. Vocational instruction comprises: drawing at sight and modeling; geometrical drawing in its applications to the industries; ornamental composition, execution of the compositions given in the theoretical course;

elements of water-color drawing and wash drawing; elementary work of application, and reproduction of models given at the course in ornamental composition.

Advanced Division.—Theoretical instruction is given by oral courses or lectures bearing on ornamental composition, architecture, history of art, comparative anatomy, applied hygiene, political economy, and labor legislation; also courses in technology in connection with the composition and making of lace, embroidery, upholstery, jewelry, goldsmiths' work, cabinet work, furniture, art ironmongery, ceramics, stained glass, enamels, leathers, ivory, the utilization of the processes of stencilling, batik, photography, etc. Vocational instruction comprises: ornamental composition (realization of the programs laid down by the various art industries); drawing at sight and modeling from the antique and from nature; architectural or geometrical drawing in its industrial applications (panelling, doors, windows, ceilings, interior decoration, adaptation of furniture to its objects, etc.); drawing for laces and various embroideries; drawing for jewelry, goldsmiths' work, and art ironmongery; drawing for painted papers, hangings, silks, printed stuffs, etc.

Work in Art Industries.

The practical work covers applications to works of art and to the making of the following: lace, various embroideries (costumes, furniture, linen drapery, etc.), painting and water-color drawing on paper, linen cloth, skins, velvet, silk, cloth, wood, glass, ceramics, etc.; applications to works of art which utilise the processes of modeling, molding, stamping, etc., to molding leather, to working in metal, horn, ivory, mother-of pearl, valuable woods, etc.; to tinting stuffs by the processes of batik or pochoir, engraving, miniature figures for styles, etc.; and photography (enlargement, projection, and retouching).

Conditions of Admission.

Pupils are admitted into each of the divisions of the school by annual competition, usually held in June. Those domiciled outside of the Department of the Seine must pay from 100 to 200 francs annually according to the courses of instruction taken.

For the elementary division candidates must be not less than 13 or over 15 years, but the certificate of primary studies admits at 12 years to the competition, comprising dictation in orthography, which serves also as an examination in writing; a composition; drawing at sight an ordinary object or a cast; elementary geometry and arithemetic; sewing.

For the higher division candidates must be not less than 15 or over 20 on October 1st of year of competition, which comprises graphic examinations, viz., perspective drawing at sight; drawing from the bust; drawing from memory on a reduced scale, examination in perspective and geometrical abstract, and ornamental composition. Oral examinations consist of questions on general history and general geography, on the physical and natural sciences, on

ordinary geography, and projections and linear perspective. An optional examination bearing on all the subjects taught in the higher division.

The following are excused from the competition in the higher division, on fulfilling the conditions as to age and residence: pupils of the elementary division who have obtained the certificate of completed studies; pupils of the "professional" (vocational) schools at Paris who have obtained the certificate of apprenticeship or the diploma of completed professional studies; persons who hold one of the professional diplomas for drawing at sight in the National or municipal schools.

After consultation with the committee of patronage, outside pupils may be admitted to one course or more in the higher division for a fee of from 100 to 250 francs.

(3) NATIONAL SCHOOL OF DECORATIVE ARTS, PARIS.

This School was founded in 1767 under the name of The Royal Free School of Drawing, and was given its new name in 1877. It trains decorative artists and draftsmen for art industries, also constructive and decorative architects. The instruction is free.

The school comprises two sections: one for young men, at 5 rue de l'Ecole-de-Médécine; and one for girls, at 10 bis rue de Seine. Entrance examinations are held twice a year, in October and March. Candidates must be at least 13 and not over 30 in the case of men or 25 in the case of women. They must produce a birth certificate or other document to prove identity and nationality, and must be introduced by their parents or other responsible parties. Foreigners can only be enrolled on the application of the representative of their nation.

The entrance examination for male candidates comprises drawing and modeling from the cast, or architectural composition, according to the section they intend to enter; for girls it consists of drawing from the cast only. The examination extends over five periods of 2 hours each.

Regular attendance is insisted on, and pupils absenting themselves without cause are struck off the list.

Young Men's Section.

The section for young men is open from 8.30 a. m. to 5 p. m., and from 8 to 10 p.m. The courses comprise; drawing from the antique, figure, ornament, and living model; sketching; course in ornamental composition—theory of composition, exercises on programs given weekly; study of classic styles; study of decoration—plants and natural or manufactured objects suitable for decorative purposes; study of industrial art—practice in composition with a view to its application to various artistic industries, and observations as to technical conditions of wood, furniture, various metals, textile fabrics, papers, printing, binding, glass, stained glass windows, ceramics, etc.; abstract and analysis of classic models; decoration—composition for painted architectural decoration, pasteboard for upholstery, stained glass windows, with use of the

diagram; modeling—figure and ornament, living model; sculpture—practice in composition with a view to reproduction in wood, bronze, stone, wax, etc., for industrial purposes, also architectural decoration; architecture—special courses for decorators and architects, the latter based upon courses in mathematics, descriptive and analytic geometry, stereotomy, and resistance of materials, thus supplying the necessary scientific knowledge; architectural drawing—study and exercises in composition; architectural composition—theory of composition from the point of view of structure and decoration; study of ancient monuments; exercises in composition on plans and sketches.

In the architectural studio compositions are developed according to program. Special courses in comparative anatomy are open to all students of perspective and art history. Technical lectures are given by artists and the leaders or foremen of manufacturing industries. The pupils are thus initiated into practical methods of execution. Visits to workshops complete this instruction. A course in pedagogics is given to prepare candidates for professorships of drawing under the State or City, by familiarizing them with the various examinations.

Section for Girls.

In the section for girls the courses are open from 9.30 a.m. to 4 p.m., with a holiday on Thursday, except for certain lectures which are held on Thursday morning. The instruction is identical with that given to young men, and the same subjects are taken, comprising drawing, classical studies, ornamental composition, architecture, including analysis of the properties of the various materials used, decoration, and composition. In the decorative studios compositions are studied from the point of view of industrial art. Modeling is also studied, and there are special courses in perspective, comparative anatomy and history of art, as well as technical lectures and a course of pedagogy in preparation for examinations.

Competitions are constantly held in both sections, pupils passing through successive divisions according to their progress. Medals and money prizes are awarded to the most successful pupils, and certificates of studies on graduation. As the school receives pupils of varied degrees of attainment, there is no time limit, the length of the course varying according to the pupil's proficiency on admission. In general, however, a pupil needs to remain 3 or 4 years in order to profit by the instruction, while a decorator who has already been trained in another place may not require more than 1 or 2 years.

There are about 820 pupils in attendance, of whom 120 are girls. The present premises are insufficient, and it is proposed to unite both sections in one building.

(4) LOCAL SCHOOLS OF ARCHITECTURE.

To practise as an architect no diploma is required, but since 1872 the School of Fine Arts, Paris, has granted an architectural diploma which is much sought after. It is quite evident that architects who possess diplomas, that is, who have followed a complete and methodical course of instruction and have

passed difficult examinations, offer to the public a higher standard of competency than others; yet there are scarcely 600 of these in the whole of France, the majority of architects having been trained haphazard through an apprenticeship.

Local schools of architecture, instituted to furnish young men desirous of entering this profession with facilities for study hitherto lacking, have been established in university cities, where there are more educational facilities than elsewhere. Since the enactment of the law of 1903, under which these schools operate, they have been opened at Lyons, Rouen, Rennes, Marseilles and Lille, and it is intended to establish schools at Bordeaux, Nancy and Toulouse. They are organized on the plan of the architectural section of the School of Fine Arts and lead up to the same diploma, for which examinations are held twice a year in Paris. The programs and studies are the same, except that there is no studio at the school itself, and the pupils choose whichever outside master they prefer.

The Training of Architects.

The instruction comprises: ornamental drawing, perspective, genera' history, mathematics and mechanics, descriptive geometry, stereotomy and surveying, physics and chemistry, construction, building legislation, general history of architecture, history of French architecture, decorative composition, theory of architecture, literature, history of art and archaeology, figure drawing, modeling; simultaneous instruction in the three arts—Painting, Sculpture and Architecture.

The examinations, exercises and compositions of the candidates and pupils are decided by boards of examiners of the School of Fine Arts, and conducted by an architect delegated by each local school.

The students are divided into two classes, young men between 15 and 30 being received into the 2nd class by competition, the examinations for which are held twice a year in each school. This examination is open to foreigners. Candidates for the schools of architecture, and visitors, may be authorised to attend the lecture courses.

For promotion to the 1st class, pupils must have obtained medals or distinction in the competition, and worked through the 2nd class. Pupils in the 1st class who have obtained medals or distinctions may obtain a certificate of studies without further examinations.

(5) SCHOOL OF DRAWING AND BUILDING ART.

This school, at 11 rue St. Benoit, Paris, founded in 1901, is intended (1) for young men preparing for the National School of Fine Arts (architectural section), for schools of architecture, or for municipal or departmental government posts (1st division); (2) for candidates for professorships of drawing in lyceums, colleges, normal schools, primary higher schools, and schools and courses of the city of Paris (2nd division). The course is begun by correspondence, and completed at the special studio, where the number of pupils is limited.

Correspondence Course.

The school sends lessons and corrected papers to pupils of the 1st division. Every week the pupils receive written lessons on architecture, construction, and stereotomy or geometrical tracing, of which they have to make a graphic application on a synoptic program. In this way they are practised in architectural composition. In their 1st year they study the principles of architecture, perspective outline, stereotomy and construction. In their 2nd, private or public architecture, according to whether they intend to engage in private practice or under the Government. In their 3rd, they make a complete design with all the details of execution.

In the 2nd division, pupils are prepared for the official examinations admitting to professorships. The lessons deal with perspective, shading, history of art, decorative composition, etc. In their 1st year they study drawing, perspective, history of art, appliedgeometry, and anatomy; in the 2nd, pedagogics and the practice of teaching, passing the first grade or normal school examinations; in their 3rd, they take decorative composition, styles and stylisation, passing the higher grade examination in decorative composition, or those of the city of Paris.

There is a preparatory year for young men who need to perfect themselves in outline drawing, geometrical figures, and descriptive geometry and shading before taking up the special studies.

The cost varies from 8 to 40 francs per month, according to the courses.

Course in Special Studio.

This comprises the same subjects as are taught by correspondence. The weekly division of time is as follows:—

1st Division: (1) study of architecture, comprising graphic documents with corrections, on a synoptic program; 6 lessons of 4 hours each; (2) an outline of architecture, pupil's original work, to be studied and delivered under the conditions of the competition, in 12 hours; (3) a drawing from the cast, model or diagram of descriptive geometry, in 8 hours; (4) questions in mathematics, general geometry and descriptive geometry, algebra and arithmetic; (5) papers in mathematics and history.

2nd Division: (1) a lesson in perspective and a diagram, 8 hours; (2) a lesson on the history of art; (3) a lesson in pedagogics; (4) graphic work in drawing and applied geometry, to be done in the time allotted for the examination test; (5) questions and practice in blackboard drawing.

The studio is open from 8 a. m. to 6 p.m. The monthly enrolment and school fee is 10½ francs, inclusive.

Normal Class.

Shortly before the examinations, a normal session of pedagogical preparation is arranged, comprising collective questions, lessons in drawing, and graphic tests.

All the teachers in the school hold either State or Paris diplomas.

(6) SCHOOL OF CERAMICS, SEVRES.

This School, annexed to the National Factory at Sevres, is intended to train ceramists.

Pupils are admitted by examination held every July at the factory. Scholarships of 800 francs each, which may be augmented by 100 francs annually, are awarded to poor students.

Candidates must be French, and not under 16 or over 19 at the time of the examination. Applications must be sent to the manager of the factory, with certificates of birth, of primary education, of good conduct and habits, and a memorandum of previous studies and work. The subjects of the examination are as follows:—

Eliminatory Examination: (1) linear and geometrical drawing (abstract and projections); geometrical abstract; plan, elevation and section, if any, of a simple object in relief on a sheet of half size; time 4 hours; (2) arithmetical and geometrical problems, time 3 hours; (3) drawing from the cast on a drawing sheet Ingres size, time 4 hours; (4) freehand drawing of a plant or simple object on a sheet of half great eagle, time 4 hours.

Final Examination: questions in arithmetic, geometry, principles of geometrical drawing, algebra, chemistry and physics.

Physical fitness of candidates for the workshop must be proved by a certificate from the physician at the factory, before the final examination.

The course is 4 years. There is a post-graduate course of 1 year, for which pupils are allowed 1200 francs, and during which they devote themselves to work, the program of which they make up for themselves, but which is subject to the approval of the council of the school.

Course of Instruction.

The instruction comprises the following courses:

Methods of geometrical drawing, imitative and water-colour drawing, modeling, decorative composition, history of styles and of ceramics, chemistry and ceramic technology, anatomy, turning, molding, repairing and manufacture of molds, study of the various ceramic processes for the decoration of porcelain, laboratory work, technical designs, decorative designs, composition, manufacture and decoration of pieces of pottery, and studies in cooking, muffles and ovens.

3d year.—Turning, molding repairing, manufacture of molds, etc.; application of the various ceramic processes to the decoration of porcelain; general studies in decorative composition; imitative drawing; water-colour drawing; studies at the museum (sketching); geometrical drawing, and modeling.

4th year.—Studies in ceramic painting and decorative composition; imitative drawing, studies from the antique and from nature, and studies in anatomy; composition of designs and application of practical work to execute them; methodical and developed course in decorative composition; modeling; studies at the ceramic museum (sketching); geometrical drawing (designs);

general manufacturing, practical studies; work in the chemical laboratory; ornamental drawing, and water-colour drawing.

At the end of the course, pupils who maintain the general average of 13 marks are granted the diploma.

SECTION 3: INFORMATION FROM HIGHEST AUTHORITIES.

Information obtained in "Conversation" with MR. LOUIS GUEBIN, *Principal Inspector of Drawing in the Schools of the City of Paris.*

Drawing in France is compulsory in all primary schools from ages 6 to 12. It is treated like any other subject —like the French language, or arithmetic, or geometry. In the Higher Primary public schools both boys and girls have 3 hours drawing out of a total of 30 hours per week in their general course, while boys in the industrial course have 4½ hours weekly, and in the business and agriculture courses 1½ hours. In the industrial section of the Practical Schools of Commerce and Industry both sexes get 6 hours drawing per week in the first year, while in the second and third years girls get 3 and boys get 7 hours weekly.

All over France drawing is taught by the teachers themselves just as they teach geometry, but large cities have special professors for drawing. In Paris there are about 200 schools for boys and 200 for girls where special professors of drawing come (about 11) to the scholars in the last years of their study at the primary school, to prepare their minds more especially for industrial purposes. These professors are artists in drawing, sculpture, etc. and are chosen after competition.

After taking a primary obligatory course, pupils can go to a supplementary course, then to a special school for drawing, then to a professional school for wood, iron and book-binding. From the special school of design they can go to the School of Fine Arts; after that they do as they like.

There are scholarships of 500 francs given to pupils. After travelling, students return and produce a different quality of work.

DRAWING CONGRESS "COMPETITIONS".

Mr. Guebin was one of the organizers of the International Congress on Drawing and Art at the Paris Exposition in 1900. He explained that so much of importance had been found in this branch of teaching that it was decided to meet every fourth year. Meetings were held at Berne in 1904, London in 1908, and Dresden in 1912. The latter was attended by about 2,000 delegates from all parts of the world. A permanent international federation has been formed to carry on the work.

Mr. Guebin claims that the new method of teaching, adopted in the present French programme, came from the special study made of the question by the International Congress, followed by their suggestions and work. Formerly

this teaching used to be a kind of copying work, based completely on geometrical forms; now pupils study more from Nature, the geometrical forms coming only as a help to enable them to draw the object.

The Commission, in company with Mr. Guebin visited a large hall in the Place de la Concorde, where we found between 200 and 300 girl students of Paris schools, aged about 12 or 13, some 50 of whom were from the continuation courses in competition for promotion to higher classes. They were making art "compositions" direct from natural flowers, and conventionalizing designs; for this work they are allowed four hours. A similar number of boys were in another part of the building in charge of male teachers. One of the subjects was the decoration of a bon-bon box octagonal in shape. Competitors must furnish a design for the top of the box, then make a drawing for the lateral face of the box.

The first competition (in ordinary drawing) was held the previous week, among 600 students; then out of that number these selected were allowed to compete further in composition, having gained that right by obtaining "special mention" in the ordinary drawing competition. These competitions were instituted ten years ago.

Mr. Guebin's Principles and Methods.

The Commission visited the Normal School of Drawing, a special school established in 1896 for teaching the pedagogy of drawing. Teachers from the primary Normal Schools who wish to teach drawing as a specialty come here to perfect themselves. Principal Guebin and his colleagues give special lectures. The teachers' course is given only on Thursdays throughout one year, equivalent to 25 lessons.

Teachers do not teach drawing as a special subject unrelated to any other, but their general teaching is done by the aid of drawing. The aim is to teach children at from 8 to 10 years so that as soon as form can be understood the children draw that form. Specimens of pre-historic man living in grottos were illustrated by drawings in color.

The vertical line is not treated by Mr. Guebin as an abstraction, but is illustrated by examining the vertical lines on a tree, a telegraph pole, a picket fence, etc. Horizontal lines are illustrated by diagrams of steps, table, boat water, etc. Oblique lines are represented by drawing a latticed fence, etc

Drawing is used for teaching language, geography, technical terms, etc such as desert, plain, etc. and at the same time giving graphic representations of objects.

The three principles underlying M. Guebin's method are:—(1) That the students have liberty of sentiment and even of interpretation—of course comprised within certain limits of correction, gradually becoming more severe. That the master have liberty of action, and encouragement to initiative according to his appropriate temperament. (2) Drawing is studied less for itself than as a means of general education. Everything that will incorporate the matter of the primary studies, and mix with it the intellectual life of the school, shall answer this purpose. Drawing shall be used not as a pleasing art but

as a general instrument of culture and as a further enforcement of the normal play of the imagination, the sensibility and memory. (3) Nature is taken as a basis; it is loved for itself, and translated directly and naively. Nature is concrete; the drawing must not be abstract. In nature as we see it and as we try to copy it geometry does not exist.

Drawing Correlated with Language, etc.

M. Guebin uses drawing for lessons on language. He showed us several illustrations of homonyms—French words for similar objects, e.g., suspended bodies—lamps, bell, etc; bodies resting—tree, wardrobe, etc. Teachers ask scholars for names of suspended objects; for bodies bent against the wall; bodies that appear to have nothing to suspend them, such as aeroplanes. Drawing is used in history teaching, e.g., scenes in connection with the siege of Paris. In geography, ideas were given of Switzerland by a general view in colors of lake and mountains, tunnel, watch, cheese, etc. Three states of water were shown; rain, steam, ice; glass carafe broken by the ice bursting. The history of a river was shown by drawings of bridge, embrochure, another river tumbling into it, springs from which it starts, etc. In physics, the ideas of atmospheric disturbance were shown by drawings representing atmospheric electricity, lightning, trolley cars, electric tramway. Chemistry was illustrated by a volcano emitting sulphur, the spraying of vines, flowers in a bottle, flame of a candle, sulphurous gas. A lesson is given on sulphur and the children are asked to give an account of it by means of illustrations. Three different parts of France were illustrated by special features—pasture, paper-making, etc. Different types of habitation were shown—hut, cottage, tent, chateau, farm, ordinary city house. In one of the children's drawings a stable and chickenhouse were added. Habitations of animals—dog's house, bird's nests, cage for birds, bee-hive, ground mice under a tree. Family life was represented by pot à feu, dishes, vegetables used in making soup, cook skimming from the pot, family at table eating.

How Children are Trained to Draw.

The above drawings are made without regard to accuracy, the object being to get the expression of the personality of the child. Concurrently with this, however, he gives drawings in which he insists on accuracy. He will say to a child, "The object about which I am speaking to you has a round form." The teacher would go to the board and draw a round form and show that it is round. This is instruction by drawing. They leave the child at liberty as far as the execution is concerned, but he is too young to be allowed to choose the object, as he would always select the same thing. When a child is left to choose his own object he makes a figure from his own idea, whereas by requiring the child to observe an object he makes the idea more definite. Specimens of children's work were produced by M. Guebin showing results under both these conditions. In the first case the eyes and nose were grotesque, while in the other they became quite human.

To train the hand for brush work, simple designs are first cut in paper marked out in dry colors, so that when the pupil starts a similar design in water colors, the colors will not run beyond the line, but will be clear and definite like those cut in paper. Crayons or water colors are used at the option of pupils. Drawing is one thing, and coloring is another. You must not look for form when you color. The theory of colors is taught by showing the different colors.

Nature and geometry are combined by taking a leaf and turning it at different angles, showing the difference in width by means of perspective.

French and German Methods Compared.

Young children, having no sense of comparison, always make their drawings too small. To develop the sense of comparison of sizes there were sheets representing an eyelet and different sizes of circles, rings, etc. up to a large circle, so that children would know about what size to draw a pearl or a ring. Another device used to represent relation of sizes was a sheet showing heads and hats, pots and covers, letters and envelopes, keys and key-holes, etc.

To illustrate places and positions there were drawings of things on top, at the side, inverse, behind, etc. To show perspective he has pictures representing scenes at different angles—similar ones being pasted on the same sheet so as to impress the point. Thus to represent the idea of convergence he gives a view of birds (side view); also bodies in a circle.

M. Guebin has carefully worked out his pedagogical plan, covering analysis, synthesis, applications of art, etc. He gave us an analysis of the German method of drawing. The elements are initiation, presentation, direction, quantity, distance. Fig. 1 was drawn from nature to the best of the pupil's knowledge. Fig. 2 simplifies the object of his drawing. He puts his first drawing away and he returns to the object, drawing it in a different position. In Fig. 3 he simplifies again. Then from memory he makes Fig. 4, showing the object in that new position which he has taken. Then in the fifth exercise he takes back the model and puts it in the same position as his fourth drawing, and draws it there finally.

"Conversation" with an Engineer.

Information obtained in "Conversation" with Mr. M. L. Francken, *Engineer, Professor in the schools of the city of Paris, Officer of Public Instruction, Author of "The Teaching of Drawing and its Professional Applications."*

The first principles of drawing should be taught to every person from an early age, so as to put the child into a position to express himself with its aid. A child of two or three years old draws naturally, and all the teacher has to do is to develop and direct this natural faculty. If we go the right way and develop this natural instinct of the child we have no effort to teach him how to draw. Look at the future, and see what enormous advantages this boy will have in later life if he knows drawing.

When a child first comes to school we teach him how to write, without reference to his special future occupation. We do not tell him, "You shall be a poet; you shall be a romancer, a great writer," etc. It should be the same with

drawing. After this starting point there will of course be some branching out in different professions, those who want to go to workshops, or to higher courses of arts, or to engineering, etc., being directed in that way.

Mr. Francken claims that every profession should know how to draw, for this skill is as useful to a litterateur as to a mariner. Drawing helps every trade in the world; every station in life will take a young man if he knows drawing. Ordinary commerce, selling goods, would not seem to require any notion of drawing; but such men sometimes have to compile statistics, and if they can do so by graphic methods, these are more telling and more exact than ordinary figures. Again, a man who sells dry goods will be interested in coloring, and would be glad to know how to mix colors so as to produce a good effect instead of a bad one.

Development of Popular Taste.

If a clever workman who knows drawing produces a fine piece of workmanship, how can he sell his work to a rich man who has no notion of what is artistic and pretty? Hence all classes should know drawing. The teaching of teachers of drawing must be continued, and taste must be developed. To be able to draw, even to be an artist, is quite different from being prepared to teach drawing properly, for a man cannot be a good teacher of drawing simply because he is an artist; he must make a special study in order to teach drawing.

Mr. Francken claims that drawing does not interfere with general school instruction, but on the contrary if taught properly may be a means of reducing the time now spent in teaching geography, history, natural history, and other subjects.

Before 1865 France practically did not teach drawing universally in the schools, but it received confirmation in 1867 when a great Commission investigated the matter at the time the Exhibition was held in Paris. It was only in 1900 that this instruction was generalized in primary schools, but drawing was then only optional, not compulsory, in the certificate of primary schools, at the age of 12. It was made compulsory only in 1907. Of course drawing was practised in France for a very long time, but to generalize it they had to get the sanction of the law, which was passed only about four or five years ago. Now drawing is compulsory. The International Congress as well as the National Congress had considerable influence in that direction. The latter Congress means a great deal more in influence from the fact that it is National.

"Conversation" with Sub-Inspector of Drawing.

Information obtained in "Conversation" with M'lle de Montille, *Inspector of Drawing for a section of Paris.*

In France the fundamental principle is that every child should know how to draw. We give plaster-casts and work from new objects, and make the children draw those things as seriously as though they were all to be great artists. But we do not make it turn to the technical side at once; we do not teach it right away for any certain trade or craft; whereas in Germany the child, from the very

minute it starts, begins to learn a craft alongside the drawing; therefore German children know the craft better, but never become such good draughtsmen as do the French. We make them do something practical at the same time as we teach them to draw; but while they are doing something that will be useful for a craft, they are not learning the craft itself.

In our examinations one day we will give the children a wall-paper to design, and the next day a table service. Our children know very much less technique than the Germans, but they become better artists.

Children Study Artistic Models.

M'lle de Montille attended the Art Congress in London in 1908, and observed that the French art was more artistic than any shown there, while the German was stronger in technique. She thinks the reason France gets its artistic taste is that the French children are made to study artistic things; they are accustomed from the very beginning to go to the museums and study the beautiful things there, and are sent on certain days to all the temporary exhibitions that are held.

As an illustration of how good artistic taste permeates France, M'lle de Montille said that sometimes, while copying at the Louvre at lunch hour, workmen would come in and stop and look at the pictures, and the observations they would make on them were such as she would not have believed if she had not personally heard them. It is the appreciation of everybody—more like the judgment of the whole people.

Teachers always choose the most beautiful things for teaching. The Greek works are the most beautiful that exist. In regard to the use of the brush for flowers, Paris teachers let the child do pretty much as it likes.

No matter how little, everything must have a reasonable line. The scholars should correct each other. They are sometimes asked to judge which is the best drawing in the class, and they select the best and give the reasons. The children very often do ugly things because they do not know any better.

SECTION 4: SCHOOLS OF FINE ARTS.

NATIONAL SCHOOL OF FINE ARTS, LYONS.

In its organization and teaching this school approaches most nearly that of Paris.

Pupils are admitted from 14 years of age, on proving that they have the necessary education to profit by the courses.

The entrance examination comprises oral examination and competitions. Young people are received from 13 years of age in the preparatory school, where special instruction is given to enable them to pass the entrance examination.

For other candidates there is a session for examination and competition before the re-opening of the school.

The instruction given to pupils of the preparatory school comprises: geometry; free-hand drawing, study of figure ornament, geometrical drawing, and tinting.

Art Applied to Industries.

All pupils, on their entrance to the School of Fine Arts proper, unless they prove that they possess special knowledge, pass successively through the classes of relief and the living model. It is only after they have passed the competitions and promotion examinations that they can enter one of the following practical classes: painting, sculpture, architecture, floral and decorative art, and modeling applied to industry, putting on card, and composition applied to textile fabrics.

Class in relief: Descriptive and perspective geometry; study of the human figure and ornament from the bust; and history of art.

Living model class: Drawing from the living model; and the pupils who aspire to the various applied classes take the following courses: perspective, history of art, and archeology.

Those in the classes in painting, sculpture, and engraving follow a course in anatomy; those in the architectural classes follow courses in stereotomy; and those in the floral and decorative art classes study the industrial applications. A course in modeling is attached to this teaching.

At the end of the school year a competition is held for each of the practical classes; to the 1st prize there is attached 100 francs, and to the 2nd 50 francs.

The Parisian prize is granted every year, after a special competition, in two sections, to the pupil, painter, sculptor, or engraver who is adjudged to be the most capable to follow with profit the courses of the School of Fine Arts at Paris. This prize consists of an annual allowance of 1,800 francs during three years.

NATIONAL SCHOOL OF FINE ARTS, PARIS.

This, the well known "Ecole des Beaux Arts", at 14 rue Bonaparte, Paris, established under the law of Dec. 2, 1876, is devoted to the teaching of painting, sculpture, architecture, copper-plate engraving, engraving on metals and fine stones, engraving with aqua fortis, wood engraving and lithography. The instruction is free and is given:

(1) By oral public courses in the different branches of art;

(2) By competitions in the school which for this purpose is divided into three sections—(*a*) Painting (including copper-plate engraving, engraving with aqua fortis, wood engraving and lithography); (*b*) Sculpture (including engraving on metals and fine stones); and (*c*) Architecture;

(3) By studios to the number of 17—4 for painting; 4 for sculpture; 3 for architecture, and one each for copper-plate engraving, engraving on metals and fine stones, engraving with aqua fortis, wood engraving, lithography and practical sculpture. Each of these studios is conducted by an artist;

(4) By access to museums, galleries, and school library.

The pupils are all day scholars, and are divided into three groups according to the nature of their work and studies—1st group, pupils in painting and sculpture; 2nd group, pupils in architecture; 3rd group, outside pupils authorized to work in the galleries and to follow the oral courses, but who do not take part in the work of the school proper.

Terms of Admission, Courses, etc.

Pupils of the first two groups are admitted after examination: they must be at least 15 and not over 30 years; must present their birth certificates; also a document from a well-known artist, a director of an art school, etc., certifying that they are able to pass the entrance examination and to follow the instruction given in the school. Foreigners must also present a letter of introduction from the ambassador, minister or consul-general of their nation, stating the date and place of their birth. While candidates are admitted up to the age of 30, in practice this extreme limit cannot be taken advantage of, as all pupils cease to form part of the school on reaching the age of 30.

Entrance examinations take place twice a year, viz., for painters and sculptors in October and April; and for architects in July and December. They constitute for painters, sculptors and engravers what is called the competition for places. For architects these examinations admit to the second class. Enrolments close five days before the date of the first examination.

The pupils of the third group (candidates), when introduced by an artist, obtain a card of admission permitting them to follow the oral courses, to have access to the collections and to the library, and to draw in the galleries, where they receive the advice of their professors.

Since 1897 women have been admitted to this school under the same conditions as men.

The oral courses and instruction by means of the collections and the library are attended by the first and second groups of pupils of the school proper and any other persons (candidates or others) who have obtained cards of admission.

The oral courses comprise: In the sections of painting and sculpture—Anatomy, history, archeology, perspective, esthetics and art history. In the section of architecture—Mathematics, descriptive geometry, stereotomy and laying out plans, physics, chemistry and geology, perspective, construction, building legislation, general history of architecture, French architecture and theory of architecture. Courses common to all above sections are general history and literature.

Courses Outside of the Studios.

In the sections of Painting and Sculpture, under the name of *evening school*, practical courses in Drawing and Sculpture are given daily from 4 to 6 p.m. Pupil-painters, sculptors and engravers who succeeded at the previous competition for places alone are admitted. Every week a new model is given as a subject for study, alternating between antique and nature. For sculptors only, a course is

given in sculpture on stone and marble, intended to train practical sculptors. Ten professors (five painters and five sculptors) chosen from among the leading French artists, each conduct the evening school during one month.

In the section of Architecture a special course in ornamental drawing has been opened for pupil-architects.

Under the name of simultaneous instruction in the three arts, courses are given in modeling, elementary architecture and decorative composition, open to the pupils admitted to all the sections.

The School Proper and the Studios.

The pupils of the school proper participate in the practical studies and in the competitions, may obtain rewards and qualifications, and may also be admitted to the studios of the school, though many, if not the majority of the pupils of the school, attend private studios. These have the same rights of competition, duties, privileges and rewards as those who attend the school studios. The competitions in the three sections are very numerous, being held quarterly, semi-annually or annually. After these competitions "mentions", third medals, second medals and first medals are granted. Sums of money are attached to some of the principal rewards. In order to take part in certain competitions the pupil must have obtained distinctions in previous competitions. To each reward there is assigned a definite number of marks or values, from ½ up to 5. The total value obtained by a pupil is the figure he retains during his whole stay at the school, and which decides his rank as well as his right to take part in certain competitions.

In the section of Painting and Sculpture there are competitions in which the pupils of the school proper alone can take part, and others which are common to the pupils who have been admitted and to those who have not been admitted to the school proper. Pupils who are successful at these competitions may be excused from entrance examinations to the school proper.

The studios of the school are open (1) to the pupils of the school proper, who choose, in order of seniority and according to their rank o admission, one of the studios in their section in which they desire to study; (2) to young persons who have not been admitted to the school proper, but who are accepted by the professor. Each of the private studios is under whatever regulations the chief of the studio imposes.

Competitions in Painting and Sculpture.

In the sections of Painting and Sculpture the entrance examinations are called competitions for places.

In the section of Painting, comprising also copper-plate engraving, the preliminary (eliminato y) examination comprises a face drawn from nature, at one of the sessions, and from the antique at the other session. The entrance examinations comprise: 1st, anatomical drawing (osteology); 2nd, perspective drawing; 3rd, fragment of face drawn from the antique; 4th, elementary study

of architecture; 5th, examination (written or oral at the choice of the candidate) on general elements of history.

In the section of Sculpture (comprising also engraving on metals and fine stones) the preliminary examination (eliminatory) comprises a face modelled from nature, at one of the sessions, and from the antique at the other session. The entrance examination is identical with those in the section of Painting, but omitting perspective drawing.

Admission holds good only for six months, or rather till the session of the following examinations. In order to continue to form part of the school proper the pupil must after that time undergo new entrance examinations unless he has obtained certain rewards after the competitions.

Work Done in Studios.

The following is a summary of the work in the studios:

Painters: Exercises in drawing and painting from nature and from the antique. Exercises in composition. Exercises in decorative composition.

Engravers in Copper-plate: Elementary exercises in engraving. Exercises in engraving either from the prints of the masters or from drawings executed by the pupil. Faces drawn from the engraving and from the antique. Exercises in decorative composition.

Sculptors: Exercises in modelling from nature and from the antique, either in high relief or in low relief. Exercises in decorative composition.

Engravers on metals and fine stones: Elementary exercises in engraving. Exercises in engraving, either from metals or the antique, engraved stones or models executed by the pupil. Figures drawn or modelled in bas relief from nature and from the antique. Exercises in composition on metals and cameos.

Section of Architecture.

This section comprises two divisions, the second and the first class.

The entrance examinations to the 2nd class consist of an architectural composition executed in a separate room in 12 hours. Only candidates who pass this examination are authorized to enter for the following examinations: (1) drawing of a head or of an ornament from the plaster, to be executed in 8 hours.

The 90 Frenchmen who obtain the greatest number of marks and the thirty foreigners (comprising the proportion who are admissible) are alone authorised to enter for the following examinations: (1) exercises (done in separate room) in calculus, one being in logarithmic calculus; also an examination in arithmetic, algebra and elementary geometry; (2) descriptive geometry applied to an architectural projection (done in a separate room in 8 hours); (3) an oral examination and written composition on the elements of general history.

The number of admissions after examination is limited to 45 Frenchmen and 15 foreigners.

When once a pupil has been admitted to the Architectural Section of the school it is final, at least for those pupils who fulfil the conditions imposed by the school regulations, whereas pupils of the section of Painting and Sculpture are admitted for only six months.

For students of architecture the work of the studio consists in scientific exercises and exercises in composition. The pupils pass from the second class to the first class as soon as they have obtained a certain number of marks after the periodical competitions. The duration of the stay in the first class is variable, depending on the pupil's merits. The studies which lead to the architectural diploma last six years on the average, though some pupils have obtained it after four years of study after entering the second class.

Pupil architects may obtain the diploma of Architecture by final competition to which are admitted only those who have obtained a sufficient number of marks at the previous competitions. The subject matter consists of an architectural plan conceived and developed as if it were to be executed. To this is added an oral examination on the different parts of the plan, on the theoretical and practical parts of the construction, on physics and chemistry, on building legislation, and on the history of architecture.

Simultaneous Teaching of the Three Arts.

The pupils in each section are initiated into the elements of the arts of the other sections. These studies are limited as follows:—

Section of Painting: Figures, modelled alternately from nature and from the antique, and elementary exercises in architecture.

Section of Sculpture: Figures, drawn alternately from nature and the antique, and elementary exercises in architecture.

Section of Architecture: Ornamental drawing. Drawing of figures from nature or from plaster. Ornamental modelling, and occasionally figure modelling from plaster.

The Roman Prize. ("Prix de Rome.")

The dream indulged in by many artists and by all the brilliant scholars of the School of Fine Arts is to obtain the great Roman prize, the principal advantage connected with which is a four years' residence in Italy at the expense of the State. The competition, which is absolutely public, is under the direction of the Academy of Fine Arts. The examinations take place at the School of Fine Arts, which alone has quarters suitable for a competition of this magnitude. In order to be admitted to this competition it is necessary to be French, to be over 15 and not less than 30 years of age, to be unmarried, and to be furnished with a certificate of capacity from a professor or a well-known artist.

The competition for the grand prizes in Painting, Sculpture and Architecture is held every year; for the grand prize in copper-plate engraving every second year only; and for the grand prize for engraving on metals and fine stones every third year. In 1905 for the first time a young lady was admitted to the final competition for the Roman prize in Painting.

Every competition is divided into trial and final competitions. The former take place in March or April. The competitors execute their final work in a separate room, and cannot communicate among themselves or receive any outsiders except the models. The duration of the stay in a separate room is: for painters and sculptors 72 days; copper-plate engravers 90 days; engravers on fine stones 96 days; architects 110 days.

For each competition three prizes are given, to which pecuniary rewards are attached. The winners of the first grand prizes are called boarders of the French Academy at Rome, and are lodged at the Villa Medicis. The work they send in is exhibited publicly at the School of Fine Arts in Paris. Every boarder receives 600 francs for the expenses of his journey from Paris to Rome, and the same amount for the return trip. The yearly salary is 2,310 francs, besides the boarding indemnity of 200 francs. Moreover at the end of each year the students are reimbursed for the cost of their studies. During the first year of their board they travel in Italy; the second year they may travel in Italy and Sicily. The pupil painters of the third year may be authorized to execute the usual copy in a foreign museum outside of Italy. When they travel their salary is paid to them at the rate of 267½ francs per month.

The architects spend their fourth year in Greece, and when starting out they receive an indemnity of 800 francs. They may even go beyond Greece and extend their studies as far as Egypt or Asia Minor.

CHAPTER XXXVIII: SCHOOLS FOR SPECIAL INDUSTRIES.*

SECTION 1: NATIONAL SCHOOL OF WATERS AND FORESTS, NANCY.

This school is intended to insure the recruitment of the superior staff of the administration of Waters and Forests, both in France and in the French colonies. All the pupils have been recruited from amongst graduates of the Agronomic Institute. Graduates of the Polytechnic School also may be admitted without competition.

Graduates of the Agronomic Institute who are candidates for the School of Forestry must be under 23 years of age on January 1st of the year in which they present themselves, and must obtain an average of at least 15 marks in mathematics and in special acquirements in German or English. To this end, when leaving the Institute, they undergo a special final examination on a modern language, which comprises an exercise at the board, the explanation of a text from the open book, and questions in German or English.

The number of pupils admitted to the school annually must not exceed 18, 2 of these being intended for Algeria under decree of July, 1909.

The pupils follow a two-years' course at the school, during which they receive a salary of 1200 francs. This salary is swallowed up by the cost of food and quartering in barracks. When pupils first enter the school the parents must also expend 1200 francs for equipment and uniforms, besides 600 francs annually to defray cost of journeys, riding lessons, etc.

Military Service.

In pursuance of the law of March 21, 1905, those pupils, who have been admitted and declared fit for military service, contract a military engagement for 4 years. They complete one year's service before entering the school; the two school years count as if passed in the army; then having passed the final examinations they complete their military service by passing a 4th year as sub-lieutenants of the reserves. The school may accept pupils who have not yet been recognised as fit for military service, in case this disability is the result of constitutional weakness only, and appears to be capable of improvement in time; but pupils who, on graduating, do not possess the physique required for military service, and those who have not fulfilled the requisite conditions for appointment as sub-lieutenants of the reserves, are, under decree of 1909, removed from the list of the personnel of Waters and Forests.

*Reports on Schools for Miners, Schools for Fishermen, Schools of Navigation, and Schools for the Tanning and Leather Industries are to be found at the end of Part III.

The instruction given at the school embraces a thorough study of the scientific and economical management of forests.

Subjects of Study.

(1) *The forestry sciences*, viz., sylviculture, forestry technology, dendrometry, forestry economy, pastoral economy, forestry statistics, the valuation of forestry properties, and history of forestry sciences (150 lessons of 1½ hours);

(2) *Natural applied sciences*, consisting of the applications to forestry of botany, mineralogy, geology, zoology, and especially of pisciculture and entomology (150 lessons of 1½ hours);

(3) *Forestry legislation*, which extends far beyond the limits of the forestry code of 1827, and embraces the important portions of civil law, administrative and penal law, legislation on public works applied to the restoration of mountains, also fishing, hunting, and the destruction of noxious animals (100 lessons of 1½ hours.);

(4) *Applied mathematics* in relation to topography, means of transportation in forests (routes, railways, etc.), rudiments of applied mechanics, bridge construction, sawmills and forestry buildings, and the correction of streams and agricultural hydraulics (100 lessons of 1½ hours);

(5) *Modern languages* (German and English), in relation to the reading and explanation of German and English authors on forestry (60 lessons of 1 hour);

(6) *Military art*, comprising all matters necessary for officers who must take their place in the national army in time of war.

Since the decree of December 30, 1897, which widens the powers of the administration of Waters and Forests as regards pastoral improvements, fishing and pisciculture, all these subjects have been developed extensively in most of the branches of instruction.

School Year; How Arranged.

Each school year is divided into two parts, the winter term of 6½ months being devoted to theoretical and practical studies, and the summer term of 2½ months to applying these studies to the land, and to preparing for the examinations which occupy one month at the end of the year.

During the winter term, one day every week is devoted to practical education, the other days being taken up by courses and studies. The school contains large collections of natural history objects, woods and forestry products, which are utilised under the direction of the professors. There is also a library of considerable extent, which includes the majority of French and foreign works on forestry subjects.

Country excursions take place, either in the neighborhood of Nancy or in other parts of France. In this way, the 2nd year division prepares plans for the management of foliaged and resinous forests, and then prepares studies in the Alps with relation to the correction of streams. Likewise, the 1st yea pupils visit the Vosges, Jura, or the Paris basin, the oak forests of the west, and the pine forests of the Landes.

Although this is a boarding school, the pupils enjoy a fair amount of liberty, similar to that of pupil-officers at the school of Fontainebleau. Their meals are served by the school outside the establishment, and after these meals they may take their recreations in the city. They have also their evenings free. They are compelled to wear the uniform and carry a sword.

Classification of Pupils.

The pupils are classified according to the marks obtained at the examinations and the practical work. Two classifications are made every year: one at the end of the winter term, and the other after the excursions and the general examination. At this latter examination the results of the classification at the end of the term are counted as one-half. Any pupil who has not secured a total number of marks equal to half of the maximum total number belonging to the corresponding year is suspended. The same applies to those who have not obtained 8 (out of 20), in forestry or natural sciences, and 6 in the other subjects of instruction. At the end of the second year, or during that year, when a course is completed, the pupils are examined by a jury of 3 professors, presided over by the director. They are likewise examined from the point of view of military education by a commission presided over by a superior officer. According to their final standing they are permitted to choose their probationary residence from a list prepared by the administration; and those who obtain a general average of 15, out of the total number of marks, immediately receive the rank and salary of third-class general guards.

Young men who have graduated from this school attain the rank of inspector, at 4,000 francs, at about the age of 42; nearly all become first-class inspectors, at a salary of 6,000 francs; the most favored ones attain the rank of commissioner, with salaries of from 8,000 to 12,000 francs.

The service comprises 300 general guards and 215 deputy inspectors, who perform the same duties under the orders of 300 inspectors and 32 commissioners.

Outside Students.

The school also receives pupils who do not intend to enter the employ of the administration of Waters and Forests. They may be of either French or foreign nationality. Both are admitted free to the courses and the practical work, without undergoing an entrance examination.

The education given by the French School of Waters and Forests is highly esteemed throughout the entire world, and the courses have always been attended by a large number of foreigners.

Certain governments have special agreements with France which determine the courses for which attendance shall be required. The admission of these foreigners does not entitle them to the receipt of any salary. In this way, from 1868 to 1886, England sent to Nancy young men who were intended for the Forestry Service of India; Belgium likewise has for a long time past sent to Nancy its forestry candidates who have graduated from the agricultural institutes at

Gembloux and Louvain. By virtue of similar agreements, foreigners may be admitted to the school as boarders. The education they receive at Nancy is perfectly suited to future managers of private forests or to young men who will have to administer rural estates.

For some years past the course in forestry sciences taught at the school has comprised a series of lessons with special reference to the forests of the French colonies. This course is attached to the division of colonial studies organised at the university of Nancy. The whole constitutes the best preparation for young men who are intended for the colonial administration or for colonisation.

Station of Forestry Investigation and Experiments.

There is attached to this school at Nancy a station for investigations and experiments, with a staff of two forestry agents, carried on with the collaboration of the school professors, and intended to aid theoretical instruction by experiments and by operations in which the students can participate. To this end, the station has the technical control of about 3000 hectares of forests, the majority of these being situated in the neighborhood of Nancy, and some in the resinous district of the Vosges. In these places various methods of treatment and cultivation are carried out, whilst conforming to the arrangements approved by the administration.

Besides these, the station manages, under similar conditions, an arboretum and a piscicultural establishment in the neighborhood of Nancy.

Besides the management proper, the experiments carried out in this field of studies comprise observations on forestry meteorology, which have been continued during the last 25 years and have yielded valuable results; and also a very varied mass of investigations, the program of which is decided on by the director of the school, and which regards a great number of important points in sylviculture and forestry physiology.

SECTION 2 : MUNICIPAL SCHOOL OF SILK WEAVING OF LYONS.

This school was begun as an apprentices' workshop, was then transformed into a regular school, and became a municipal school in 1884.

Its aim is to give young men complete theoretical and practical instruction on silk weaving, in order to enable them to enter the trade or to perfect themselves in the silk weaving industry.

It has now 340 students, both day and evening; some also attend on Sunday mornings.

The school has 14 looms. As far as possible, it prefers to get machines of different construction from all parts of the world, and, if possible, built on different principles, so as to give pupils experience in all kinds.

Students come at the age of 15; but a few exceptions may be made. The evening and Sunday morning courses are for apprentices, and include practical work. The evening course lasts three years. Day pupils take a one-year course, but they have 8 hours every day, and 14 hours of theory every week, besides practice in using the machines and making plans.

When these day pupils leave the school they have merely a foundation for their future work. They then go into stores where they sell silk, and gradually become more expert in the work; and they might become heads of factories, but are not competent workmen.

Teachers are generally taken from the trade, by means of a competition which is open to everybody. The city spends 40,000 francs annually to support the school. The income from the sale of certain goods made by the pupils is between 3000 and 4000 francs. The fee for Frenchmen is 125 francs and for foreigners 300 francs. Poor students pay only the registration fee of 3 francs. There are also scholarships. Evening school pupils pay only the registration fee of 3 francs.

There is an examination every three months, and when a pupil has passed this and the final examination at the end of the year he gets a diploma.

The students do not make designs; these are furnished by the school. They are taught to assemble machines and to take them apart, and spend some weeks doing that work, but they are unable to repair a machine.

In the Superior School.

In the Superior School of Commerce, Lyons, there is a silk weaving department, attended chiefly by sons of owners of silk works. The students buy silk and prepare it; take machines down and put them together again.

The boys make the larger drawing of patterns, but the original one is made by the professor. In the local school of Fine Arts there is a special class for teaching drawing for fabrics. These designs come down here, and from them the boys make the larger working drawings. The boys know whether the design is workable on a machine, because they have to make a working drawing.

In the first year the students have to do hand work. The finer qualities of work have to be done by hand. One student took an idea from a pattern on a calendar and worked it up.

The school contains cases showing silk made by silk-worms from mulberry and oak; also showing the various processes for the production of silk—the primary process showing the silk unrolled from the cocoon in hot water.

The Silk Museum in connection with the Lyons Chamber of Commerce was visited. This museum is used by students for copying patterns and getting suggestions for designs. The collection of rare fabrics is extremely valuable, one small square with unique pattern and history being insured for 800,000 francs (about $160,000).

SECTION 3: FRENCH SCHOOL OF PAPER-MAKING.

(Annex of the Electro-technical Institute of Grenoble.)

This school, which was established on the initiative and under the patronage of the Union of French Paper Manufacturers, is intended to train paper-mill engineers, future directors of factories (higher division), and paper-mill managers, who can finally attain the position of heads of factories (elementary division).

The higher division, which was established on November 1, 1907, comprises two years of study. The first, called the year of general studies, presupposes the same acquirements as for the program of the class in mathematics. The second year, called the year of special studies or of paper-making proper, besides receiving first-year pupils, may receive directly former pupils of the great French and foreign schools (polytechnic, central, arts and trades, mines, etc.). A successful course in the higher division is rewarded by the diploma of Engineer Paper-maker of the University of Grenoble.

The program of first-year studies comprises: elements of physics, chemistry, mathematics, electricity, mechanics, and industrial drawing required by engineer paper-makers. The second year is devoted entirely to the study of paper-making and the allied sciences. The pupils attend both the courses in commercial and industrial law and those of a financial nature.

The duration of the studies in the elementary division is one year, and successful students receive the degree of Manager Paper-maker of the University of Grenoble.

Fees.—Higher division, 1st year, 260 francs; 2d year, 560 francs; elementary division, 360 francs.

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CHAPTER XXXIX: AGRICULTURAL EDUCATION IN FRANCE.

INTRODUCTORY.

According to the provisions of the law of March 28, 1882, the system of agricultural education in France has been carefully organized in elementary schools and in normal schools, and many higher primary and modern secondary schools include a special section of agriculture. Apart from the provision for agricultural instruction as an integral part of general education, France is supplied with special Schools of Agriculture—schools that are models of organization, equipment and method. The reorganized Universities are zealously turning their resources to the service of agriculture.

With the exception of a few private schools, agricultural education is under the control of the State, which pays the expenses, in whole or in part, of such instruction, either through the Ministry of Agriculture alone, or conjointly through this Ministry, the Departments and the Communes.

Agricultural education may be said to be of two kinds: that which is chiefly academic, being given in certain primary, secondary and normal schools under the Minister of Public Instruction by teachers appointed by the Minister of Agriculture; and the technical instruction given in the various Schools of Agriculture.

Notwithstanding these provisions, complaint is made that they have failed to stop the exodus of young men from the farms under the alluring attractions of city life. There is evidently a distinction between the development of agriculture and the uplift of rural life. For the development of agriculture two conditions are fully supplied in France—one of practical education by the District Schools of Agriculture, which rank with the secondary schools of Commerce and of Arts and Trades: and the other by provision for scientific instruction and research by the University laboratories and Experimental Stations.

For the uplift of rural life many agencies are working. But here as in other countries, it is beyond one's power to separate these from the field of education. This field is cultivated for more than the improvement of agriculture as a business; particular attention is given to the development of the workers as citizens and the betterment of their opportunities.

Special Teaching in Ordinary Schools.

This consists of lessons in agriculture and horticulture, given either by the Departmental Professors under the Minister of Agriculture, or by the special Professors of Agriculture selected for this work by the same Minister.

The instruction is quite elementary, and is given as one of the usual subjects in the school, in every class, without regard to the future occupation of the pupils.

The course is generally a series of "object lessons," the principal aim being to give an elementary idea of Agricultural Science, and in the primary schools to awaken in the pupils the love of country life, in order to prepare the peasant's son to follow the occupation of his father. In a certain number of schools there is also more practical work, with a garden or experimental plot attached.

In the majority of schools, agriculture is the only subject taught, but where the needs of the district call for it, lessons are given in horticulture, viticulture and arboriculture. The teachers are paid by the Minister of Agriculture, whose servants they are, and the Department and Communes pay a part of the expenses of the experimental plots and the cost of preparing them.

It is admitted that the teaching of agriculture in the elementary schools has proved of little advantage. The general inspector of the branch, M. Leblanc, complains that the lesson is too often a mere repetition of memorized rules; occasionally a teacher is found who turns the plot of ground, belonging to the school or the teacher's house, into a garden for practical instruction and experimentation. Various causes are assigned for this unsatisfactory condition, such as the crowded program and the brief period of school life, disabilities which can be overcome by prolonging the ordinary period of school attendance. The law of January 11, 1890, raised the minimum age at which pupils may enter the examination for the certificate of primary studies from 11 to 12 years.

In the French Normal Schools, the aim of the special lessons is to familiarize the future rural school teacher with the daily life of his pupils and to enable him to give a practical direction to his teaching.

This special instruction is given in 87 Normal Schools for primary teachers by the Departmental Professors, and in 186 Primary and Secondary schools (except in Paris, where 8 teachers divide this work) by the Special Professors of Agriculture.

With a view to its encouragement, prizes are offered to those teachers who show the best results from their instruction. These prizes consist of silver medals together with cash ranging from 100 to 300 francs, and are awarded by the Minister of Public Instruction. The Minister of Agriculture also awards medals to those teachers who are not eligible for the previous medal, but who have nevertheless shown zeal in organizing agricultural instruction.

SECTION 1: FOUR KINDS OF SCHOOLS.

Technical agricultural education, under Government direction, is organized in 4 stages, corresponding roughly to the grades of ordinary instruction, these being as follows:

I. Farm Schools, 10 in number, corresponding to primary instruction;

II. Practical Schools of Agriculture, 38 in number, corresponding to higher primary schools;

III. National Schools of Agriculture, numbering 3, corresponding to secondary schools;

IV. The National Agronomic Institute, corresponding to University education.

In addition, there are 4 Special Schools of the rank of National Schools, 11 schools of the class of the Practical Schools, for dairying, agriculture, agricultural industries and stock-keeping, and 8 others, of the farm-school grade, for cheese-making and apple-culture. A few schools are for girls only.

Schools of Horticulture.

There is the National School of Horticulture at Versailles and the Municipal School of Horticulture at Paris, the latter, however, not under the Department of Agriculture. Horticulture is also one of the subjects in almost all the agricultural schools.

Farm Schools.

These are the most elementary of the agricultural schools, and aim to prepare their pupils by practical training for the lower grades of agricultural labor—small farmers working their own farms, foremen, farm-bailiffs, etc. Pupils are required to have the leaving certificate of the elementary school, or to pass the entrance examination, their ages being from 14 to 16. The course covers 2 or 3 years, the pupils living all the time on the farm, where they are boarded, lodged and taught free of charge. They also receive a cash bonus on completion of their studies, of the maximum amount of 300 francs. Their families only have to supply their outfit, which costs from 220 to 250 francs. The boys have to work on the farm about ten hours a day, with additional class work. Each Farm School takes from 20 to 40 pupils, the principal being usually the farmer who often owns and always manages the farm on practical and commercial lines, with a view to making profits for himself. He buys on his own responsibility all the material and stock, and has to pay all the expenses for the keep and instruction of the pupils. On the other hand he retains all the revenue from sales, and receives certain allowances from the Minister of Agriculture—(a) salary for himself and other teachers, (b) 270 francs per annum for each pupil, (c) a general grant for teaching expenses. The total amount of the grant comes on the average to about 15,000 francs per school, exclusive of the cash prizes given to pupils on leaving, which are paid by the Minister.

Certificates from the Minister of Agriculture are awarded on completion of the course and on passing the final examination before a committee on which the Ministry is represented. The schools are inspected by the Department of Agriculture, and the principals have to report regularly. The day of the Farm Schools is evidently past, the tendency being to replace them by Practical Schools which give more instruction and have less apprentice manual work.

Practical Schools of Agriculture.

These are intended for a higher class of pupils, and give more advanced instruction, leading to higher positions. At the same time they only require the same entrance standard as the Farm Schools, and are gradually replacing the latter. The age of admission ranges from 13 to 21. The course extends over

2, 2½ or 3 years. The pupils are usually boarders, the fee being 450 to 600 francs, but as this sum barely covers the cost of board and lodging, it may be said that the instruction is free. The total annual expenses of a pupil are from $158 to $200, which includes board and lodging. In the case of necessitous pupils these are met by scholarships or allowances, State grants, and grants from the departments and communes.

The programs of these schools vary considerably, the aim being to adapt the instruction and work to the agricultural conditions of the neighborhood. Consequently some devote themselves to dairying, others to horticulture, viticulture, sylviculture or pisciculture. As a rule half the time is devoted to theoretical teaching and the other half to practical work, the pupils putting in not less than 12 hours a day. There are 50 or more pupils in each school. The subjects are more advanced and varied than in the Farm Schools, and there is less manual labor.

The regulations for examinations and certificates are practically the same as in the Farm Schools and the organization is on the same lines, the principal being the farmer, who farms for his own profit. The State gives similar financial aid to these schools, paying salaries of director and teachers, and making a grant for teaching and bursaries. The total amount of grants from the State made to each school varies from 19,600 francs to 20,750 francs.

National Schools of Agriculture.

These are owned and maintained by the State. They are of a higher grade than the Practical School and have a different aim, which is to give much more general or national instruction than either of the other two classes mentioned.

A higher standard of general education is required and the entrance examination is more difficult, a certain number of marks being allowed to holders of certificates from the Practical Schools of Agriculture and other places. The minimum age for admission is 17. The course is one of 2 or 2½ years. The fee comes to 1,250 or 1,500 francs for boarders, day pupils paying 500 francs a year. There are a certain number of bursaries and scholarships for boarders and day-boys respectively. Their courses deal with cultures of every kind which may be met with in any part of France or in the colonies. The instruction is scientific and technical, and the work on the farm is not heavy, consisting chiefly in helping the staff, supervising, visiting other farms or observing important features of agricultural life. They are designed for young men who intend to manage properties in the country either on their own account or for someone else, or to engage in the work of agricultural instruction.

The Grignon and Montpellier Schools receive boarders, half boarders and day scholars. The Rennes school receives only day scholars. Pupils are admitted by competition and, according to their order on the list, choose the school they wish to enter. The boarders' places especially, which are limited in number, are allotted according to the order of merit.

All three schools receive without examination outside students, who attend the courses to suit their convenience,but who are not admitted either to the study

halls or to the laboratories, though they may exceptionally be authorized to attend all or part of the practical exercises on payment of a special monthly fee of 25 francs.

Foreigners are admitted as day scholars or outside students. If there are no French candidates, the places available for boarders and half boarders may be allotted to foreign pupils.

The courses begin at Grignon and Montpellier on the second Monday in October, and last for two years and a half. The pupils finish at the end of March in the third year. At Rennes the courses last two years

QUALIFICATIONS FOR ENTRANCE.

Candidates must be at least 17 years of age on April 1st of the year they are admitted, and must apply to the Minister of Agriculture before June 5th. The written examinations are held on the last Monday and Tuesday in June in eleven cities.

These tests, which are elementary, comprise: (1) a French composition; (2) a paper in mathematics (solution of a problem in arithmetic and of one or two in geometry); (3) a paper in mathematics (solution of a problem in mechanics and of one in algebra or trigonometry); (4) a paper in physics and chemistry; (5) a paper in natural sciences; and (6) a given sketch.

The written compositions are marked by coefficients.

The oral tests bear on mathematics, physics and chemistry, and natural sciences. They can be taken in any one of the four following cities: Paris, Angers, Toulouse or Lyons.

The instruction is given by regular courses and lectures, with application and practical work on the school lands and in the laboratories; and trips are made to agricultural and industrial establishments.

The pupils, while taking part in the various labors and duties of agriculture, get an insight into the details of superintending, carrying out, and managing the work of the farm.

During the vacations (from the end of July to the second Monday in October), the pupils must work on a farm and must draw up a detailed report of what they have observed. For this report they are allowed a mark, which is taken into account in the annual classification.

THE GRIGNON SCHOOL.

Cultivation in its widest sense is studied in this school: sowing meadows with grass, cultivation of cereals, forage plants and industrial plants, investigation of live stock and the agricultural and viticultural industries of Northern France.

The school possesses 125 hectares (368 acres) of arable lands, natural meadows and copses; also a field for work and experiments, kitchen gardens, botanical and sylvicultural gardens, a cow-house, a sheepfold, and a piggery for breeding and for experiments. These and the agricultural station complete the equipment for theoretical and practical instruction. The grounds of the school extend over 300 hectares.

Professorships.—agriculture; zoology and animal husbandry; physics, meteorology, and technology; agricultural mineralogy and geology; agricultural engineering, mechanics, machinery, hydraulics, and building; general chemistry and agricultural chemistry; agricultural economics and legislation; botany; sylviculture; viticulture and pomology; horticulture; arboriculture; and entomology.

The instruction by the professors, in certain special or secondary branches, is supplemented by lectures given by scholars or agriculturists, or by assistant professors. The subjects of the lectures are the following: entomology, human hygiene, horticulture and market-gardening, dairying, book-keeping, arithmetic, geometry, algebra and trigonometry (subjects preparatory to the course in agricultural engineering), practical agriculture, work in zootechny, analytic chemistry, vegetable pathology, etc.

Every year at the Easter holidays there is an agricultural excursion throughout France or abroad, during which the pupils, accompanied by their professors, visit large agricultural establishments selected from those which are best conducted.

The National Institute.

The National Agronomic Institute represents the highest grade of agricultural instruction, corresponding to that given in the Faculties of the Universities in other sciences. It is situated at Paris, with experimental farms and gardens in the suburbs. Pupils must be at least 17, and the entrance requirements are higher than any of the other agricultural schools. The course is two years and all pupils are day scholars, the cost being 625 francs. Twenty bursaries are awarded annually, and two travelling scholarships for three years of 375 francs a month. There is a third year limited to 20 students, who each receive 100 francs a month for its duration. The aim of the Institute is to train farmers and proprietors with a real scientific knowledge of agriculture, for the scientific staff of the Department of Agriculture, teachers of agriculture, directors of experimental stations, agricultural engineers and Government agricultural employés. The instruction is entirely scientific and experimental, the practical work consisting of visiting farms and estates, and working on a specified farm during the summer holidays. There are 160 students, 80 in each year, and about 200 candidates for the 80 vacancies.

Relations of the Schools and the State.

The National Schools and the Agronomic Institute are the property of the State, and are maintained by it. The members of the staff are employés of the Department of Agriculture. This also applies to some other schools. In other cases, the school building and grounds belong either to the State, the provincial authorities, the commune, or to the principal himself. Sometimes the principal is the tenant, renting the land at his own risk, with the assistance and under the inspection of the Minister of Agriculture. Sometimes he is only financed by the latter: in other cases he also receives help from the provincial authorities. As

a rule, in the Farm Schools and Practical Schools the principal is also the farmer and manages the farm for his own profit like any other farmer. As the allowance from the Department for educational work leaves no profit, provided he does his duty by the pupils, the principal must count on his own farming ability to supplement the salary paid him by the State. The salary of a principal varies from 4,000 to 6,000 francs, and that of a teacher from 2,700 to 4,000 francs.

The number of pupils in agricultural schools of all kinds in France is approximately as follows: Farm Schools and Practical Schools, 2,200 pupils in 48 schools; National Schools, 400 to 500 pupils in 3 schools; Agronomic Institute, 160 pupils.

SECTION 2: DOMESTIC SCHOOLS OF FARMING AND DAIRYING.

These schools for girls are situated at Cöetlogon (Ile-et-Vilaine), Kerliver, commune of Hanvec (Finisterre) and Le Monastier (Haute-Loire). They were established with the aid of the Department of Agriculture, which controls them and maintains scholarships.

Beside these fixed schools, there exist in certain departments (Nord and Pas-de-Calais) Itinerant Schools of Dairying which were established and are maintained by the departments.

Below is a sketch of one each of these two categories of schools.

Cöetlogon School.

This school, established in 1886, with the aid of the department of Ile-et-Vilaine, of the city of Rennes, and of the Chamber of Commerce, is situated two kilometres north of Rennes in one of the healthiest districts. The pupils are boarders.

Its object is: (1) to propagate and develop dairying by training pupils able to apply and spread a knowledge of the best processes and to furnish all useful information on the management of dairies; (2) to give to girls who intend to live in the country such knowledge as is necessary for a farmer's wife, viz.: taking care of the house, attending to tillage, the cow-house, the dairy, the piggery, and the garden; and to enable those who cannot utilize this knowledge at home to get good positions for themselves.

Girls are admitted at the full age of 14 years. They must make request to the directress before July 1st, and hand in certificates of birth, vaccination, good conduct (from the mayor), and a copy of their diplomas or certificates of studies. Those of foreign nationality may be admitted upon authorisation of the Minister of Agriculture. Besides regular pupils, the school receives probationers who come to spend only a few months.

Board is 125 francs a quarter.

Scholarships are maintained by the State and the department. Applicants must, during the first half of August, pass an examination comprising questions on elementary instruction, the French language, orthography, arithmetic and metric system, history and geography of France.

COURSES OF INSTRUCTION.

The instruction lasts for one year, beginning from October. Theoretical instruction embraces household economy, domestic hygiene, technology of milk, elements of animal husbandry, market-gardening and fruit arboriculture; and, lastly, supplementary lessons in French and arithmetic, and especially farm book-keeping. Practical instruction comprises butter and cheese making, care of the poultry yard, some gardening, housekeeping, particularly kitchen work, cutting, sewing and washing.

Pupils who have passed the final examination receive a certificate. Medals may be granted to those most deserving.

Since its foundation the school has received several hundreds of young girls from all parts of France and abroad—Belgium, Russia, England, Germany, Austria, Roumania, Norway and Haiti. Those who did not return to their families to continue to work for their parents have been placed to good advantage by the directress, and over 40 are now directing schools of dairying.

The Kerliver and Monastier schools were organized on the same basis as that of Cöetlogon. They receive boarders, half-boarders and day-scholars. Full board at Kerliver is 400 francs a year, half board 250 (at Monastier 200).

Itinerant School of Dairying at Pas-de-Calais.

This school was founded by the general council in August, 1906, at the suggestion of M. Tribondeau, departmental professor of agriculture. It is intended to give to young girls the necessary agricultural instruction to enable them to make the most of the products of the farm. It holds sessions of three months in those communes which ask for it and submit to certain definite conditions.

The instruction is both theoretical and practical. Pupils are initiated into the best methods of skimming milk, as well as rational buttermaking and the making of cheese of various kinds. They practise judging the quality of milk, and proportioning the cream by the best processes in use. They are taught farm book-keeping, domestic economy, family hygiene and care of children, and the care of animals, as well as the best conditions under which to feed them. They have lessons on the part which the earth plays in the nourishment of the plant, the importance of ordinary manuring, and the use and composition of the principal chemical manures; the poultry-yard receives special attention. Thus it is seen that this school is a real economic school of farming.

The working plant, furnished by the departments, comprises:—centrifugal cream separators, churns, and a rotary kneader; the necessary articles for the reception, control and analysis of milk and cream; molds and various utensils required for cheesemaking; heating apparatus, kitchen utensils and dishes; articles required for washing and ironing linen; school furniture, tables, chairs, wall pictures and bookcase.

The communes where the school is to be held are bound to furnish suitable premises for its installation. The farmers must undertake to procure the milk

required for the practical work, 200 litres daily at most. The butter, cheese and by-products are all sent to those interested.

The school is under the authority of the departmental professor of agriculture, who takes charge of the courses in agriculture, animal husbandry, poultry keeping and gardening, and gives the pupils three lectures on agricultural associations. There is also a directress, who takes particular charge of the dairying instruction and work, and a lady teacher to whom is entrusted the instruction in economy.

The tuition is free. Pupils are received from 15 years of age upwards. To have a school opened in a commune there must be at least 15 entries, and if the number is above 20 an entrance examination is held.

COURSES, DIPLOMAS, ETC.

The courses are held daily, except Saturdays, Sundays and holidays. The practical work is done from 8.30 a.m. till noon, and two hours in the afternoon are reserved for theoretical instruction. On two days in the week the pupils prepare the mid-day meal, which they take at joint expense with the teachers.

At the end of the session final examinations are held, and a diploma of fitness is given to those who have obtained at least one-half of the maximum marks attached to the tests.

The school is open to the public on one day in the week, and the farmers and their wives can then assist at all the practical work and note the advantages of the processes employed.

The itinerant school does not turn out pupils as handy and well instructed as do stationary schools; but it has the advantage of reaching families at very little expense to them, and as the pupils live at home they are able to assist their parents both before and after courses. The school also diffuses vocational agricultural instruction wherever necessary. Thus, according to one authority, it is not only "a technical school of apprenticeship, but is a real social work, which is contributing in a large measure to introduce comforts among our rural democracy."

Itinerant schools are in process of organization in other departments, especially in the Somme and the Deux-Sèvres.

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